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National Energy Board Report

NOVA Gas Transmission Ltd.

GH-001-2014

April 2015

Facilities, Tolls and Tariffs

Canada

National Energy Board

National Energy Board Report

In the Matter of

NOVA Gas Transmission Ltd.

Application dated 8 November 2013 for the North Montney Mainline Project

GH-001-2014

April 2015

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Table of Contents

Table of Contents i
List of Figures iii
List of Tables iv
List of Appendices iv
Glossary of Terms, Abbreviations and Units v
Recital and Appearances xv

1. Overview of Recommendation and Decisions 1
1.1 Recommendation 1
1.1.1 Section 52 Facilities 1
1.2 Decisions 1
1.2.1 Section 58 Facilities 1
1.2.2 Part IV Tolling Methodology 2

2. Introduction 3
2.1 The Application 3
2.2 GH-001-2014 Hearing 6
2.2.1 NEB Hearing Order 6
2.2.2 Hearing Participation 6
2.2.3 Written Hearing Process 7
2.2.4 Oral Hearing Process 7
2.2.5 Participant Funding 7
2.3 Life Cycle Approach 8
2.4 Public Interest 8

3. Tolling Principles and Methodology 9
3.1 Introduction 9
3.1.1 Project Details 9
3.1.2 Part IV Orders Requested by NGTL 9
3.2 NGTL's Current Tolling Methodology 10
3.2.1 Overview of Current Tolling Methodology for the NGTL System 10
3.2.1.1 FT-R Service – Toll Determination 10
3.2.1.2 FT-D Service – Toll Determination 11
3.2.1.3 Selected North Montney Receipt Points and Illustrative Tolls 11
3.3 Views of the Participants on Tolls and Service Proposal 14
3.4 Views of the Board on Appropriateness of Tolling Methodology 30
3.4.1 Relevant Tolling Principles 30
3.4.2 Disposition on Requested Relief 31

4. Economic Feasibility and Need for the Project 43
4.1 Need for Facilities 43
4.1.1 Natural Gas Supply 43
4.1.2 Markets 46
4.2 Transportation 48

4.3 Ability to Finance 56
4.4 Economic Feasibility 57
4.5 Views of the Board on Economic Feasibility and the Need for the Project 60

5. Facilities and Emergency Response Matters 64
5.1 Description of Facilities 64
5.2 Jurisdiction 65
5.3 Design, Construction and Operation 65
5.3.1 Codes and Standards 65
5.3.2 Material Specifications 66
5.3.3 Geotechnical Design 67
5.3.3.1 Muskeg 67
5.3.3.2 Permafrost 67
5.3.3.3 Slope Stability 68
5.3.4 Watercourse Crossings 69
5.3.5 Depth of Cover 70
5.3.6 Welding and Non-destructive Examination (NDE) 70
5.3.7 Pipeline Integrity 71
5.3.7.1 Coating 71
5.3.7.2 Cathodic Protection (CP) 71
5.3.7.3 In-Line Inspection (ILI) 72
5.3.7.4 Pipeline Maintenance Plan (PMP) 72
5.3.7.5 Integrity Management Plan (IMP) 73
5.3.7.6 Operations 74
5.4 Emergency Response, Safety and Security 74

6. Public Consultation 77
6.1 NGTL's Public Consultation Program 77
6.1.1 Overview of NGTL's Stakeholder Engagement 77
6.1.2 Public Consultation Activities 78
6.1.3 Landowner Consultation 79
6.1.4 Consultation with Government Stakeholders 81

7. Aboriginal Matters 83
7.1 The NEB's Enhanced Aboriginal Engagement (EAE) Process for the North Montney Project 83
7.2 Participation of Aboriginal Groups in the Regulatory Process 84
7.3 Engagement of Aboriginal Groups by NGTL 86
7.4 Impacts of the Project on Aboriginal Groups 89
7.4.1 Incorporation of Traditional Ecological Knowledge (TEK) and Traditional Land Use (TLU) Information 89
7.4.2 Route Selection 93
7.5 Views of the Board on Engagement and Impacts 101
7.6 Views of the Majority of the Board on Route Selection through the PMT 102
7.7 Views of Dissenting Member Parrish on Portion of Project Route 104

8. Land Matters **108**
8.1 Route Selection 108
8.2 Land Requirements 110
8.3 Land Rights and Land Acquisition 111

9. Environment and Socio-Economic Matters **113**
9.1 The CEAA, 2012 Context 113
9.2 The Board's Environmental Assessment Methodology 113
9.3 Environmental Setting 115
9.4 Environmental Issues of Public Concern 122
9.5 Environmental Effects Analysis 123
9.5.1 Interactions and Potential Adverse Environmental Effects 123
9.5.2 Mitigation of Potential Adverse Environmental Effects 129
9.5.3 Standard Mitigation 129
9.5.4 Detailed Analysis of Key Environmental and Socio-Economic Issues 130
9.5.4.1 Watercourse Crossings 130
9.5.4.2 Hydrostatic Testing 131
9.5.4.3 Wildlife and Wildlife Habitat 132
9.5.4.4 Wildlife and Wildlife Habitat – Caribou 135
9.5.4.5 Air Quality – Criteria Air Contaminant (CAC) and Greenhouse Gas (GHG) Emissions 138
9.5.4.6 Aboriginal Traditional Land and Resource Use 139
9.6 Cumulative Effects Assessment 147
9.6.1 Methodology and Approach 148
9.6.2 Caribou and Caribou Habitat 150
9.7 Follow-up Program 152
9.8 Environmental Assessment Recommendation 152

10. Infrastructure, Employment and Economy **154**

11. Section 58 Facilities **158**
11.1 Application for the Section 58 Facilities 158

List of Figures

Figure 2-1: Project Location Map with Overview of Facilities 5
Figure 3-1: FT-R Rates in 2018 and 2019 38
Figure 3-2: Average Path Distances in 2018 and 2019 38
Figure 4-1: NGTL's North Montney Drainage Area 44
Figure 4-2: NGTL's Production Forecast for the North Montney Area 45
Figure 4-3: Production Forecast for Natural Gas Liquids Expected from the North Montney Area 46
Figure 4-4: Receipt and Delivery Contract Profile for North Montney Mainline 49
Figure 4-5: Average Forecasted Receipt Flows in the Design Area 51
Figure 4-6: Average Forecasted Delivery Flows in the Design Area 51
Figure 7-1: Aboriginal Intervenors in GH-001-2014 Proceeding 85
Figure 7-2: Alternative Route Options Considered by NGTL for the Aitken Creek Section 96

List of Tables

Table 3-1: Illustrative Receipt Tolls (FT-R) Using NGTL's Applied for Tolling Methodology 12
Table 3-2: NGTL's Illustrative Stand-Alone Tolls Using Project Costs and Volume Assumptions 13
Table 3-3: Illustrative Average Path Distances (km) 14
Table 4-1: NGTL's North Montney Resource Estimate 43
Table 4-2: Total Receipt and Delivery Contracts by Shipper 49
Table 4-3: Summary of NGTL Evidence on Revenue Totals 58
Table 7-1: Aboriginal Groups that Participated in the GH-001-2014 Proceeding and the Form of their Participation 84
Table 9-1: Project Components and/or Activities 114
Table 9-2: Proposed Permanent Access Roads 116
Table 9-3: Proposed Facilities in Identified Wetlands 117
Table 9-4: Environmental Issues Raised by Participants 123
Table 9-5: Project-Environment Interactions 124
Table 9-6: Criteria, Ratings and Definitions Used in Evaluating the Likelihood of Significant Effects 152

List of Appendices

Appendix I - List of Issues 160
Appendix II - Section 52 Certificate Conditions 161
Appendix III - Section 58 Order 180
Appendix IV - Part IV Order 186

Glossary of Terms, Abbreviations and Units

AB	Alberta
ACCI	Area of Critical Community Interest; an area identified in these proceedings by Saulteau First Nation and West Moberly First Nations as an area of special significance.
Aitken Creek Section	One of the two pipeline sections of the proposed North Montney Mainline; from an interconnection with the existing Saturn section of the Groundbirch Mainline at 14-21-80-20-W6M to a point located in Unit 44, Block L, Group 94-A-13. This section includes approximately 182 km of 1,067 mm (NPS 42) pipeline.
Aitken Creek Storage	The Aitken Creek Storage facility is an existing gas storage facility in BC that currently connects to the Westcoast and Alliance systems.
Alberta System	Previous terminology for the NGTL System; the terminology changed to NGTL System in early 2013.
Alliance	Alliance Pipeline Ltd.
Applicant, NGTL or the Company	NOVA Gas Transmission Ltd.
Application	The application submitted to the Board by NGTL on 8 November 2013 for the proposed Project.
ATCO	ATCO Gas, a division of ATCO Gas and Pipelines Ltd.
ATP	Application to Participate
BC	British Columbia
BCOGC	British Columbia Oil and Gas Commission
Board or NEB	National Energy Board
BRFN	Blueberry River First Nations
CAC	Criteria Air Contaminant
CAPP	Canadian Association of Petroleum Producers
CEAA 2012	*Canadian Environmental Assessment Act, 2012*
CEARIS	Canadian Environmental Assessment Registry Internet Site

Certificate or CPCN	Certificate of Public Convenience and Necessity as defined in section 2 of the NEB Act; NGTL's Application included a request for a Certificate pursuant to section 52 of the NEB Act authorizing the construction and operation of a pipeline.
CHRP	Caribou Habitat Restoration Plan
CMP	Caribou Mitigation Plan
CMT	Culturally Modified Trees
COS	Cost of Service; the annual cost of providing service for a toll-regulated pipeline; includes, but is not limited to its operating costs, debt servicing costs, depreciation, income and other taxes, and a reasonable return on the pipeline investors' equity investment. Also referred to as revenue requirement.
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
Cost causation	A toll-making principle; to the greatest extent possible, the users of a pipeline system should bear the financial responsibility for the costs caused by the provision of services and the transportation of their product through the pipeline.
Cost pool	A cost centre to maintain separately identifiable balance sheet and income accounts in which capital expenditures, revenue, expenses and income are recorded.
CP	Cathodic Protection
CSA Z245.1	Canadian Standards Association Z245.1, Steel pipe
CSA Z662-11	Canadian Standards Association Z662-11, Oil and Gas Pipeline Systems
Decision Date	Used in the Project Expenditure Authorization to describe a date three months after the Board issues its Report on the North Montney Application.
Design Area for the Project	The area established by NGTL to consider in designing the Project for integration into the existing NGTL System; includes the North Montney Mainline and the Groundbirch Mainline and ends at the Saddle Hills Compressor Station.

Designated Project	A defined term in subsection 2(1) of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012); this Project is a designated project pursuant to CEAA 2012 and its Regulations, and is therefore subject to a federal environmental assessment under CEAA 2012.
DFO	Department of Fisheries and Oceans
EA	Environmental Assessment
EAE	Enhanced Aboriginal Engagement
EC	Environment Canada
EOC	Emergency Operations Centre
EPP	Environmental Protection Plan
ERP	Emergency Response Plan
ESA	Environmental and Socio-Economic Assessment
EUG	Export Users Group, comprised of Cascade Natural Gas Corporation, Northwest Natural Gas Company, Portland General Electric Company, and Puget Sound Energy Inc.
FID	Final Investment Decision
FNFN	Fort Nelson First Nation
FortisBC	FortisBC Energy Inc.
FSJMS	Fort St. John Métis Society
FT-D	Firm Transportation – Delivery
FT-D1, FT-D2, FT-D3	Firm delivery service available at three mutually exclusive groups of delivery points on the NGTL System; Group 1, 2 and 3.
FT-DW	Firm Transportation - Delivery Winter
FTE	Full Time Equivalent
FT-R	Firm Transportation - Receipt
FT-RN	Firm Transportation - Receipt Non-Renewable
GBPU	Grizzly Bear Population Units

GHG	Greenhouse Gas Emissions
GIP	Gas in Place
Governor in Council	The Governor General acting on the advice of the Federal Cabinet
Group 1, 2, 3 delivery points	Group 1, 2, 3 delivery points on the NGTL System are defined by NGTL. Group 1 delivery points are interconnection points with the major downstream pipeline systems, such as TransCanada Mainline, Foothills BC, Foothills Saskatchewan, Spectra Energy Transmission and Alliance Pipeline Ltd. Group 2 delivery points are non-Group 1 delivery points where the shipper elects to contract for the standard delivery service attributes. Group 3 delivery points are locations where the shipper elects to contract for a premium service which is offered at a premium price compared to service at Group 2 delivery points. Service at a Group 3 delivery location is available to any shipper provided that the shipper is the connecting pipeline operator for such Group 3 delivery location, is the only shipper at such location and is not entitled to any other service at such location.
H_2S	hydrogen sulfide, chemical formula
HDD	Horizontal Directional Drilling
HMM	Hatch Mott McDonald
HSE	Health, Safety and Environment
ILI	In-line Inspection
IMP	Integrity Management Plan
Intervenor	A party (e.g. individual(s), company or group) who has applied to participate in the hearing and has been granted standing by the Board to participate as an Intervenor; has rights and obligations in the proceedings as set out in the Hearing Order.
IR or Information Request	A written question to an applicant or Intervenor in relation to its evidence, filed by the Board, an Intervenor or the applicant during the written portion of the hearing pursuant to the deadlines set out by the Board, to which a response must be subsequently filed.
IT-D	Interruptible Transportation - Delivery

IT-R	Interruptible Transportation - Receipt
Kahta Section	One of the two pipeline sections of the proposed North Montney Mainline; from a point located in Unit 44, Block L, Group 94-A-13 to a point located in Unit 30, Block K, Group 94-G-7. This section includes approximately 119 km of 1,067 mm (NPS 42) pipeline.
LAA	Local Assessment Area
LNG	Liquefied Natural Gas
Long Term Phase	Starts at the end of the Transition Period
Mackie Creek Interconnection	A point on the Project that NGTL proposes to designate as a Group 1 delivery point through which gas will flow to the PRGT pipeline.
Mackie Creek to Saturn	The pipeline and facilities between Mackie Creek Interconnection and the northern terminus of the Groundbirch Mainline, near Saturn.
MFLNRO	British Columbia Ministry of Forests, Lands and Natural Resource Operations
MFMS	Moccasin Flats Métis Society
MLIB	McLeod Lake Indian Band
MNGD	British Columbia Ministry of Natural Gas Development
MOP	Maximum Operating Pressure
MPMO	Major Projects Management Office
NDE	Non-destructive Examination
NEB	National Energy Board
NEB Act or Act	*National Energy Board Act*
NEMA	North East Métis Association of British Columbia
NGL	Natural Gas Liquids
NGTL	NOVA Gas Transmission Ltd.
NGTL System	NGTL's natural gas pipeline system comprised of approximately 25,000 km of pipeline, associated compression, and other facilities located in Alberta and British Columbia; subject to federal jurisdiction and regulation by the Board.

NIT	NOVA Inventory Transfer; a natural gas trading hub.
NMML	North Montney Mainline; comprised of the Aitken Creek and Kahta Sections, i.e. the Project.
NPS	Nominal Pipe Size
NPV	Net Present Value
NPV COS	Net Present Value of Forecast Cost of Service
NPV Revenue	Net Present Value of Forecast Revenue
OCC	Operations Control Centre
OGMA	Old Growth Management Area
OPR	*National Energy Board Onshore Pipeline Regulations*
Part III	Part of the NEB Act entitled "Construction and Operation of Pipelines"
Part IV	Part of the NEB Act entitled "Traffic, Tolls and Tariffs"
Participant	A party (e.g. individual(s), company or group) who has applied to participate in the hearing and who has been granted standing to participate by the Board; includes the Applicant (NGTL), Intervenors and Commenters.
PCMP	Post Construction Monitoring Plan
PDA	Project Development Area
PEA	Project Expenditure Authorization; an agreement between NGTL and a customer, prescribing terms under which new facilities are constructed on the NGTL System to meet the customer's transportation service request; remains in effect throughout Project development and construction phases of the Project and terminates when facilities are completed and put into service. For this Project the PEAs between NGTL and Progress have executed schedules of service for FT-R and FT-D attached, which become operative once the Project facilities are constructed and placed into service.
PETRONAS	Petroliam Nasional Berhad
PFP	Participant Funding Program
Pipeline	The proposed North Montney Mainline.

$PM_{2.5}$	Particulate matter up to 2.5 micrometers in size
PMP	Pipeline Maintenance Plan
PMT	Peace Moberly Tract; an area located within the ACCI between Moberly Lake and the Peace River; identified in these proceedings by Saulteau First Nation and West Moberly First Nations as an area of special interest because of its cultural, commercial and sustenance resource value to these First Nation. This Project traverses approximately 8.8 km of the PMT.
PNW LNG Project or PNW LNG Facility	Pacific NorthWest Liquified Natural Gas Project; a liquefied natural gas export facility proposed to be built by Pacific NorthWest LNG Limited Partnership to be located at the Lelu Island on the coast of British Columbia, at the terminus of the PRGT pipeline.
PNW LP	Pacific NorthWest LNG Limited Partnership
PPBoR	Plan, Profile and Book of Reference
PRFN	Prophet River First Nation
PRGT	Prince Rupert Gas Transmission; a pipeline proposed to be built by a subsidiary of TransCanada to provide transportation service from the Mackie Creek Interconnection to the PNW LNG Facility.
Process Advisor	Board staff assigned to provide assistance to the public, landowners, Aboriginal groups, and Participants to help them understand the process, the different roles of the hearing participants, and how to participate in the hearing.
Progress	Progress Energy Canada Ltd.
Project	NGTL's proposal to construct and operate the North Montney Mainline, an extension of the NGTL System to transport sweet natural gas from the North Montney area in northeastern British Columbia.
QMS	Quality Management System
RAA	Regional Assessment Area
Recovery Strategy	Environment Canada's *Recovery Strategy for the Woodland Caribou, Southern Mountain Population (Rangifer tarandus caribou) in Canada.*

Report or National Energy Board Report	Report submitted by the Board to the Minister (as defined in section 2 of the NEB Act) that sets out the Board's recommendation as to whether a Certificate should be issued for all or any portion of the pipeline, the reasons for the recommendation, and all the terms and conditions the Board considers necessary or desirable in the public interest to which any Certificate would be subject, pursuant to section 52 of the NEB Act. This Report also contains the Board's decisions in respect of NGTL's applications under section 58 and Part IV of the *NEB Act*.
Rolled-in	Combining costs from various facilities into one cost pool with, for example, one joint revenue requirement for toll making purposes.
RoW	Right of Way
RRMS	Red River Métis Society
RSA	Regional Study Area
SARA	*Species at Risk Act*
Saturn	Saturn Receipt Point, which is near the northern terminus of NGTL's existing Groundbirch Mainline.
SCADA	Supervisory Control and Data Acquisition
Section 52 Facilities	NGTL's proposed construction and operation of the North Montney Mainline, a new 1067 mm nominal pipe size (NPS 42) outside diameter sweet natural gas pipeline totaling approximately 301 km in length, and its related facilities which include 3 compressor stations, 16 meter stations and associated facilities.
Section 58 Facilities	NGTL's proposed construction and operation of temporary infrastructure for the North Montney Mainline, including stockpile sites, laydown areas, borrow pits/dugouts, contractor yards and construction camps.
SFN	Saulteau First Nations
Shippers A, B and C	Three shippers other than Progress with executed FT-R contracts on the Project that will have their gas transported on the North Montney Mainline to the existing NGTL System.
SMP	Safety Management Plan
SSSP	Site-Specific Safety Plan

Stand-alone	Identifying and maintaining costs for certain facilities separately, e.g. a separate cost pool for toll making purposes.
STFT	Short Term Firm Transportation
TBO	Transportation by Others; an arrangement by which all or part of one pipeline's transportation capacity is contracted for by another pipeline. The cost of service for this capacity is included as a line item in the cost of service of the other pipeline.
TEK	Traditional Ecological Knowledge
TK	Traditional Knowledge
TLRU	Traditional Land and Resource Use
TLU	Traditional Land Use
T-North	Toll Zone 3 on the Westcoast Transmission System
TransCanada	TransCanada PipeLines Limited; subsidiary of TransCanada Corporation; parent company of NOVA Gas Transmission Ltd.
Transition Period	Starts when gas begins to flow on the Project and expires when North Montney gas production is first delivered at the Mackie Creek Interconnection.
T-South	Toll Zone 4 on the Westcoast Transmission System
TWS	Temporary Workspace
VC	Valued environmental and socio-economic component
Westcoast	Westcoast Energy Inc., carrying on business as Spectra Energy Transmission
WMFN	West Moberly First Nations

List of Units

10^3m^3	Thousand cubic metres
10^6m^3	Million cubic metres
10^9m^3	Billion cubic metres
$10^{12}m^3$	Trillion cubic metres
$10^3m^3/d$	Thousand cubic metres per day
$10^6m^3/d$	Million cubic metres per day
$10^9m^3/d$	Billion cubic metres per day
%	Percentage
°C	Degrees centigrade
bbls	Barrels
Bcf	Billion cubic feet
Bcf/d	Billion cubic feet per day
GJ	Giga joule (one billion joules) (1×10^9 joules)
km	Kilometre
kPa	Kilopascal (one thousand pascals)
m	Metre
m^3/d	Cubic metres per day
Mb/d	Thousand barrels per day
Mcf	Thousand cubic feet
mm	Millimetre
MMcf	Million cubic feet
MMcf/d	Million cubic feet per day
MPa	Megapascal (one million pascals)
Tcf	Trillions of cubic feet
TJ/d	Tera joules per day (one trillion joules per day) (1×10^{12} joules per day)

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act*, R.S.C. 1985, C.N-7 as amended and the regulations made thereunder; and the *Canadian Environmental Assessment Act, 2012;*

IN THE MATTER OF an application dated 8 November 2013 by NOVA Gas Transmission Ltd. (NGTL) for a Certificate of Public Convenience and Necessity pursuant to section 52 of the *National Energy Board Act* to construct and operate the North Montney Mainline, a proposed extension of the NGTL System to the North Montney area of northeastern BC (Project) and other approvals pursuant to section 58 and Part IV of the *National Energy Board Act*, filed with the National Energy Board under File No. OF-Fac-Gas-N081-2013-10 02; and

IN THE MATTER OF National Energy Board Hearing Order GH-001-2014 dated 5 February 2014;

HEARD in Calgary, Alberta on 14 to 17, 20 to 24 and 27 October 2014; and in Fort St. John, British Columbia on 18 to 22, 24 and 25 November 2014;

BEFORE:

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S. Parrish	Member
J. Ballem	Member

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Written Final Argument

NOVA Gas Transmission Ltd.
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ATCO Gas, a division of ATCO Gas and Pipelines Ltd.
Blueberry River First Nations
Brooke, William
Canadian Association of Petroleum Producers
Export Users Group
Fort Nelson First Nation
FortisBC Energy Inc.
Northwest Industrial Gas Users
Northwest Pipeline LLC
Prophet River First Nation
Saulteau First Nations
West Moberly First Nations
Westcoast Energy Inc., carrying on business as Spectra Energy Transmission
Western Export Group

Chapter 1

Overview of Recommendation and Decisions

This National Energy Board Report (Report) constitutes the National Energy Board's (NEB or Board) recommendations, decisions, and reasons in respect of NOVA Gas Transmission Ltd.'s (NGTL) application to construct and operate the North Montney Mainline, comprised of the Aitken Creek and Kahta Sections (NMML), an extension of the NGTL System to the North Montney area in northeastern British Columbia (BC) (Project), considered by the Board in the GH-001-2014 proceeding.

This overview is provided for convenience only; the Board's detailed consideration of the issues is contained in the following chapters. If there is a discrepancy between the overview and the body of Report, the wording and determinations set out in the following chapters take precedence.

1.1 Recommendation

1.1.1 Section 52 Facilities

The majority of the Board recommends that a Certificate of Public Convenience and Necessity (Certificate) be issued under section 52 of the *National Energy Board Act* (NEB Act), for the construction and operation of the NMML, a new 1067 mm (nominal pipe size (NPS) 42) outside diameter sweet natural gas pipeline totaling approximately 301 km in length, and its related facilities, which include three compressor stations, sixteen meter stations and associated facilities (together, Section 52 Facilities). The Board has set out terms and conditions, contained in Appendix II of this Report, which the Board considers necessary and desirable in the public interest, to which the Certificate would be subject if the Governor in Council were to direct the Board to issue the Certificate.

Member Parrish dissents in part from the majority recommendation. Member Parrish is concerned with the portion of the proposed pipeline which traverses the Peace Moberly Tract (PMT), from the Mackie Creek Interconnection to the existing Saturn Receipt Meter Station (Mackie Creek to Saturn). Reasons for the dissent are set out in Chapter 7 of this Report.

1.2 Decisions

1.2.1 Section 58 Facilities

The majority of the Board has decided that the construction and operation of temporary infrastructure for the NMML, including stockpile sites, laydown areas, borrow pits/dugouts, contractor yards and construction camps (Section 58 Facilities), are in the public interest. The Board issued Order XG-N081-010-2015 (Appendix III) approving the Section 58 Facilities and exempting NGTL from subsections 31(c) and 31(d), and section 33 of the NEB Act, subject to conditions. As a result, NGTL is exempted from the requirement to file a plan, profile and book

of reference for the Section 58 Facilities. The Board is of the view that the order is necessary only if the Governor in Council directs the Board to issue a Certificate in respect of the Section 52 Facilities. Consequently, pursuant to subsection 19(1) of the NEB Act, the Board has decided that this order takes effect only upon the issuance of a Certificate in respect of the Section 52 Facilities.

To the extent that the Section 58 Facilities fall within the Mackie Creek to Saturn portion of the Project, Member Parrish dissents from the majority's decision to approve those facilities and grant an exemption order under section 58 of the NEB Act.

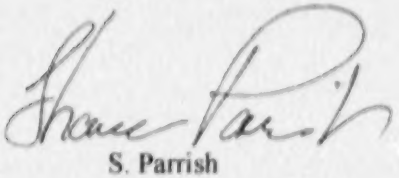
1.2.2 Part IV Tolling Methodology

The Board will allow the use of NGTL's current tolling methodology during a Transition Period (defined by the Board in Chapter 3 of this Report as starting when gas begins to flow on the Project and ending when North Montney gas production is first delivered at the Mackie Creek Interconnection), subject to Order TG-002-2015 (Appendix IV). The Board directs NGTL to establish a separate cost pool and maintain separate accounting records for this Project and, during the Transition Period, to hold in a deferral account any North Montney cost of service related to the Project that is not offset by incremental revenue from Project-related receipt and delivery contracts.

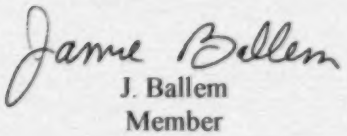
After the Transition Period, NGTL will have the option of implementing stand-alone tolling on the Project or applying to the Board for a revised tolling methodology.

More detailed information is contained in Chapter 3 - Toll Principles and Methodology, and the attached Order TG-002-2015 (Appendix IV).

R. Vergette
Presiding Member



S. Parrish
Member



J. Ballem
Member

Calgary, Alberta
April 2015

Chapter 2

Introduction

2.1 The Application

On 8 November 2013, NGTL filed an application (Application) with the Board seeking approval to construct and operate the NMML, a proposed extension of the NGTL System to the North Montney area in northeastern British Columbia (Project). The Project is designed to transport sweet natural gas from the North Montney area through the NGTL System and connected pipelines (including the proposed Prince Rupert Gas Transmission pipeline (PRGT), as described below) to gas markets across North America and to markets overseas as liquefied natural gas (LNG). Purchase and sale of the North Montney gas would be facilitated through the NOVA Inventory Transfer (NIT) market which is a natural gas trading hub where gas is bought and sold electronically.

Progress Energy Canada Ltd. (Progress) is indirectly wholly-owned by Petroliam Nasional Berhad (PETRONAS). Progress is the largest leaseholder in the North Montney area and the Project's anchor shipper. As described in Chapter 4, Progress has various contracts for firm transportation receipt (FT-R) service on the Project, building up to 56.7 $10^6 m^3/d$ (2.0 Bcf/d) by 2019.

Progress ultimately plans to provide gas supply from the North Montney area to the Pacific NorthWest LNG Project, which is a proposed liquefied natural gas (LNG) liquefaction and export facility (PNW LNG Facility), situated on the coast of BC. Gas from the North Montney area would enter the Project at various locations, and would enter the PRGT pipeline at the Mackie Creek Interconnection. The PRGT pipeline is to be an approximately 900 km pipeline owned by TransCanada PipeLines Limited (TransCanada), NGTL's parent corporation. At this time, Progress is to be the sole shipper on the PRGT pipeline; this would not be an open-access pipeline. From the Mackie Creek Interconnection, gas will be transported from the NGTL System to the PNW LNG Facility through the PRGT for export to international markets. As described in Chapter 4, Progress has contracts with NGTL for firm transportation delivery (FT-D) service starting in 2019. NGTL and Progress also contracted both receipt and delivery Project and Expenditure Authorization (PEA) agreements describing commitments for the construction and development period of the Project.

In addition to Progress, three customers which NGTL identifies as Shippers A, B and C have entered into, or are in the final stages of executing long term contracts for FT-R service on the Project.

The NMML is defined as two integrated pipeline sections and related facilities:

- approximately 182 km of 1067 mm (nominal pipe size (NPS) 42) pipeline from an interconnection with the existing Saturn section of the Groundbirch Mainline at 14-21-80-20-W6M to a point located in Unit 44, Block L, Group 94-A-13 (Aitken Creek Section);

- approximately 119 km of 1067 mm (NPS 42) pipeline facilities from a point located in Unit 44, Block L, Group 94-A-13 to a point located in Unit 30, Block K, Group 94-G-7 (Kahta Section);
- the Project includes a total of three compressor stations with bi-directional capability: two on the Aitken Creek Section of the proposed NMML (Aitken Creek and Saturn Compressor Stations) and one on the existing Groundbirch Mainline (Groundbirch Compressor Station);
- there are to be 16 meter stations along the NMML with 6 on the Aitken Creek Section and 10 on the Kahta Section. One of the meter stations will be a bi-directional storage meter station, which would connect the Aitken Creek Section to the Aitken Creek Storage facility (Aitken Creek Interconnect). One of the meter stations would accommodate delivery of gas flows into the proposed PRGT pipeline (Mackie Creek Interconnection); and
- temporary infrastructure would be required in advance of and during the construction of the Project, including, stockpile sites, laydown areas, borrow pits/dugouts, contractor yards and construction camps.

Figure 2-1 provides an overview of the facilities and the applied-for general route for the Project.

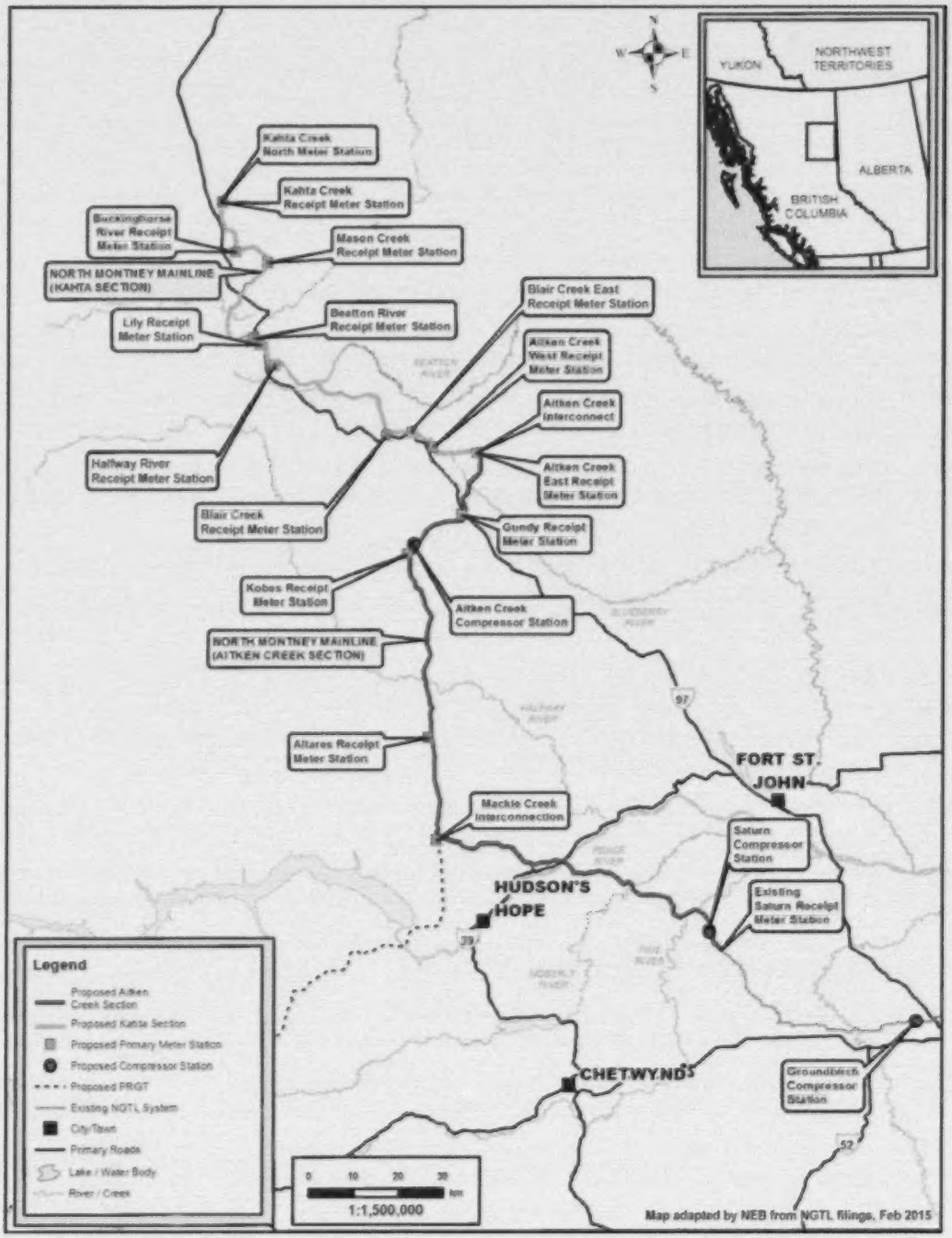
In its Application, NGTL requested the following from the Board:

- a Certificate pursuant to section 52 of the NEB Act authorizing the construction and operation of the Project;
- an Order pursuant to section 58 of the NEB Act, exempting NGTL from the requirements of subsections 31(c), 31(d) and 33 of the NEB Act in relation to temporary infrastructure required in advance of and during construction;
- an Order pursuant to Part IV of the NEB Act affirming that:
    - prudently incurred costs required to provide service on the applied-for facilities will be included in the determination of the NGTL System revenue requirement;
    - the tolls for services on the applied-for facilities would be calculated using the same methodology used to calculate tolls for services on all other facilities on the NGTL System, as determined through Board order from time to time; and
- such further and other relief as NGTL may request or the Board may consider appropriate.

Following its review of the Application, on 21 January 2014 the Board determined that the Application was complete to proceed to assessment, and that the Board would issue its Report no later than 21 April 2015, subject to any modifications to the legislated time limit allowed under the NEB Act.

The Board created Figure 2-1 to provide a general indication of the Project features, as updated by NGTL in its March 2014 Project Update, which contained amendments to the route in the Kahta Section of the NMML. This map was based on the sources noted below Figure 2-1 and was created for illustrative purposes only.

Figure 2-1: Project Location Map with Overview of Facilities



Sources: NGTL Project Application, Project Overview, Figure 1-1 Main Components of the Project, (A3Q6S5); NGTL North Montney Project Update, Figure 1: Updated Project Map – Kahta Section, (A3V1T0).

2.2 GH-001-2014 Hearing

2.2.1 NEB Hearing Order

On 5 February 2014, the Board issued the GH-001-2014 Hearing Order (Hearing Order), which established part of the process for the Board's consideration of the application. The Hearing Order included the List of Issues that the Board would consider during its assessment of NGTL's Application. The List of Issues is included in Appendix I of this Report.

2.2.2 Hearing Participation

Pursuant to subsection 55.2 of the NEB Act, the Board must determine who may participate in a hearing for a project before the Board. To be eligible to participate, interested persons or groups must request participation and demonstrate in their application to the Board that:

- they are directly affected by the proposed project; or
- they have relevant expertise or information that will assist the Board in making its decision and recommendation in respect to a proposed project.

Those who wished to participate in the hearing process for the Project were requested to submit Applications to Participate (ATPs) to the Board by 19 March 2014.

The Board originally received 48 ATPs for the Project. This included two ATPs that were filed late, and excluded those that were withdrawn. In its Ruling No. 2 dated 17 April 2014, the Board issued its decision on participation, indicating that 45 applicants were granted standing to participate in the hearing; and 3 were denied.

Subsequently, the Board received and ruled on:

- Four requests for the Board to consider late ATPs. The Board granted three requests to consider late ATPs, and in considering the ATPs, granted West Moberly First Nations, McLeod Lake Indian Band and Ms. Wendy Reaume standing to participate in the hearing. The Board denied Ms. Linda Chipesia's request to consider her late ATP.
- Three requests for the Board to reconsider its denial of standing to participate. The Board granted Apache Canada Ltd., ExxonMobil Canada Properties and Imperial Oil Resources standing to participate in the hearing.
- One request from a participant, who had been granted standing to participate as a Commenter, to participate as an Intervenor instead. The Board granted Blueberry River First Nations' request.

In total, the Board accepted 51 applicants to participate in the hearing. The Board was also informed by an Intervenor, Dene Tha' First Nation, that it was withdrawing from participating in the hearing.

The Board received two letters from Mr. Joe Apsassin and Mr. Malcolm Apsassin after the close of the hearing record on 5 December 2014. These letters are therefore not part of the record for the proceeding, and were not considered by the Board.

2.2.3 Written Hearing Process

The GH-001-2014 hearing consisted of both written and oral portions. The written portion of the hearing included the following[1]:

- NGTL's application, additional/supplemental and reply evidence;
- Intervenors' written and supplemental evidence;
- Commenters' letters of comment;
- Board's information requests (IRs) to NGTL and Intervenors, and the corresponding responses;
- NGTL's and Intervenors' IRs to each other, and the corresponding responses;
- Notices of Motion and responses;
- Responses to Board rulings;
- NGTL's and Intervenors' final arguments; and
- NGTL's reply argument.

2.2.4 Oral Hearing Process

The oral portion of the hearing was divided in two. The first oral portion, related to issues 1 to 5 and 12 from the List of Issues (Appendix I), was held in Calgary, AB on 14 to 17, 20 to 24 and 27 October 2014. The second oral portion, related to issues 6 to 12 from the List of Issues (Appendix I), was held in Fort St. John, BC on 18 to 22 and 24 to 25 November 2014.

The evidentiary portion of the GH-001-2014 hearing ended on 25 November 2014, and was followed by the submission of written final and reply argument. The record closed on 5 December 2014.

2.2.5 Participant Funding

The Board administers a Participant Funding Program (PFP) which provides modest financial assistance to support participation of individuals, Aboriginal groups, landowners, incorporated non-industry not-for-profit organizations, or other interested groups in the Board's oral hearing process. The PFP is not intended to cover all the costs of participation; applicants are encouraged to collaborate with others and seek out additional sources of funding.

The Board established a Funding Review Committee to review applications for participant funding. This committee is independent of both the Project proponent and the regulatory process. On 20 September 2013, the Board made available $250,000 under its PFP to facilitate participation in the regulatory process for the Project. The Board received seven eligible applications from Aboriginal groups and a landowner, with a total funding request for $656,195.

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[1] This is not an exhaustive list. These steps are not listed in chronological order.

Following a review of the applications by the Funding Review Committee, independent of the Project regulatory review process, funding awards totaling $235,550 were made. More information on the program and the funding awards to all seven eligible applicants can be found on the Board's web-site at http://www.neb-one.gc.ca/prtcptn/hrng/pfp/fndngrvwcmmttrprt-eng.html

2.3 Life Cycle Approach

The Board takes a life cycle approach to regulation. The NEB is involved in most projects from start to finish. After the application and decision making process, the Board regulates the construction and long-term operation of the facilities, right to when the project is no longer needed by the company (abandonment). If a project is approved, the company must comply with the terms and conditions of approval. The Board's life cycle approach includes monitoring and inspecting during construction and operations. Throughout this process, the NEB works with federal government departments including Fisheries and Oceans Canada, Environment Canada, Transport Canada and other federal, territorial or provincial authorities.

2.4 Public Interest

In reviewing an application, the Board must consider whether the applied-for facilities are in the overall Canadian public interest. In doing so, the Board must, after carefully weighing all of the evidence in the proceeding, exercise its discretion in balancing the interests of a diverse public.

The Board has described the public interest in the following terms:

> *The public interest is inclusive of all Canadians and refers to a balance of economic, environmental, and social interests that changes as society's values and preferences evolve over time. The Board estimates the overall public good a project may create and its potential negative aspects, weighs its various impacts, and makes a decision.*[2]

In making its recommendation regarding public convenience and necessity, the Board must rely only on the facts that are established to its satisfaction through the hearing process, and must also proceed in compliance with the principles of natural justice.

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[2] *Pipeline Regulation in Canada: A Guide for Landowners and the Public (Revised 2010)*, NEB, Page 1, PDF page 1 of 56 (http://www.neb-one.gc.ca/prtcptn/lndwnrgd/lndwnrgd-eng.pdf)

Chapter 3

Tolling Principles and Methodology

3.1 Introduction

3.1.1 Project Details

NGTL proposed the Project in response to customer demand to connect large volumes of incremental gas supply from the North Montney area to the NGTL System and the proposed PRGT pipeline. The Project facilities will be used in two distinct phases. During the first phase, approximately 2016 to 2018 (before gas flows through the Mackie Creek Interconnection to the PNW LNG Facility), Progress plans to sell its North Montney production in the NOVA Inventory Transfer (NIT) market, which would supply markets accessed by the existing NGTL System. During the second phase, which would commence in approximately 2019, Progress would continue to use the NIT market to manage the commercial transactions of its North Montney production while on the NGTL System, but would take delivery of gas at the Mackie Creek Interconnection for transportation to the PNW LNG Facility via the PRGT pipeline. Progress would continue to have access to the existing NGTL System and the NIT market to manage fluctuations in its gas production, its PNW LNG Facility operations, and offshore LNG markets. The bi-directional capability of the Project would facilitate Progress receiving or delivering gas on the existing NGTL System at the Saturn terminus of the Groundbirch Mainline.

3.1.2 Part IV Orders Requested by NGTL

The Applicant sought an order from the Board pursuant to Part IV of the NEB Act determining that:

a) prudently incurred costs required to provide service on the applied-for facilities will be included in the determination of the NGTL System revenue requirement; and

b) the tolls for services on the applied-for facilities will be calculated using the same methodology used to calculate tolls for services on all other facilities on the NGTL System, as determined through Board order from time to time.

For the first determination, NGTL asked the Board to find that the costs of the Project should be added to the cost pool for the entire NGTL System (i.e. treated on a "rolled-in" basis), rather than creating a stand-alone cost pool for these facilities. NGTL noted that factors typically cited in this type of determination are 1) the degree of integration and 2) the nature of service.

NGTL said that the second determination requested (i.e., to apply a common rate design across the entire System including the Project facilities), would result in tolls that are just, reasonable, and not unduly discriminatory. NGTL noted that for this type of determination the Board typically relies on tolling principles such as cost-based, user pay, economic efficiency, and no acquired rights.

3.2 NGTL's Current Tolling Methodology

NGTL proposed to apply its current tolling methodology for the NGTL System to the Project.

3.2.1 Overview of Current Tolling Methodology for the NGTL System

The NGTL System includes over 1,000 receipt points at which natural gas supply enters the system and over 1,000 delivery points at which gas leaves the system for storage, transportation by interconnecting pipelines, and ultimate delivery to gas consuming markets. These receipt and delivery points are connected by approximately 25,000 kilometers of pipelines with diameters varying from NPS 4 to NPS 48. Shippers using the NGTL System pay a receipt charge to gain access to the system and a delivery charge to take gas off the system.

When gas enters the system at a receipt point, and until it leaves the system at a delivery point, it becomes available for purchase and sale in the NIT market. This gas trading market is facilitated by the many receipt points supplying gas, NGTL's physically interconnected pipeline system, the contractual separation of the receipt and delivery points, and the many buyers and sellers participating in this market. In the NIT market, a quantity of gas may be traded several times between receipt and delivery. Natural gas can be received onto the NGTL System by the following services: Firm Transportation - Receipt (FT-R), Firm Transportation - Receipt Non-renewable (FT-RN), and Interruptible Transportation-Receipt (IT-R). NGTL's delivery services include: Firm Transportation-Delivery (FT-D) and Interruptible Transportation-Delivery (IT-D). FT-D has different attributes at Group 1, 2 or 3 delivery locations. Group 1 delivery points are interconnections with major downstream pipeline systems for delivery of gas to markets outside the Western Canada Sedimentary Basin (WCSB).

NGTL's primary services are FT-R for receipt and FT-D for delivery. The main purpose of NGTL's tolling model is to develop FT-R tolls for all receipt points and FT-D tolls for all delivery points. Tolls for most of the other receipt and delivery services are derived from the FT-D and FT-R tolls.

The determination of FT-R and FT-D tolls on the NGTL System begins with the annual revenue requirement for the entire system, which is captured in a single cost pool. NGTL makes a series of adjustments to the total revenue requirement to determine: 1) the transmission cost component, and 2) a revenue requirement for each of receipt and delivery services. Both the receipt and delivery revenue requirements are composed of a metering and a transmission component. The total cost of transmission is allocated 50% to the receipt function and 50% to the delivery function. The FT-RN and IT-R revenue is deducted from the receipt revenue requirement to determine the FT-R revenue requirement, which is then allocated to each receipt point to calculate receipt point-specific rates. Similarly, the FT-D revenue requirement is determined by eliminating the revenue for the Firm Transportation - Delivery Winter (FT-DW), Short Term Firm Transportation, and IT-D services from the delivery revenue requirement. The determination of these two values enables the FT-R and FT-D rates to be calculated.

3.2.1.1 FT-R Service – Toll Determination

NGTL allocates the total FT-R revenue requirement to each receipt station using its receipt point pricing algorithm. This algorithm's allocation factors distribute the FT-R revenue requirement based on cost drivers of pipe diameter and distance of gas haul.

The pipe diameter is used in the allocation factor to reflect the impact of pipe size on the unit cost of transportation. As pipe diameter increases, pipe capacity increases at a faster rate than unit cost. NGTL developed a unit cost index to capture the relative costs of differing pipe diameters. The unit cost index reflects the cost of each pipe diameter relative to NPS 48, which has an index of 1.0. Smaller pipe sizes have larger indices. The index incorporates pipe and compression capital costs, operating and maintenance costs, and recognizes the economies of scale with increasing pipe diameter.

The distance of haul is measured from a receipt point to the major FT-D Group 1 delivery points using an annual volume-weighted average distance on the flow path, which is based on actual flow data from the most recent calendar year. If there are flow path alternatives from a receipt point to the major Group 1 delivery locations, the distance of each alternative is weighted by the capacity of the pipes for each flow path alternative. This gives the weighted average distance for each pipe diameter from each receipt point to the major Group 1 delivery points.

The weighted average distance of haul and the unit cost index are combined to yield the distance-diameter allocation factor for each receipt station. The factor to allocate the total FT-R revenue requirement to each receipt station is based on the product of the distance-diameter factor and contract demand quantity for each receipt station divided by the product of these same variables for the total system. This calculation provides each station's allocation factor percentage, which is then multiplied by the total FT-R revenue requirement to determine each receipt station's FT-R allocated revenue. The unconstrained FT-R toll for each station is calculated by dividing its allocated revenue by its contract demand quantity. The unconstrained tolls are then adjusted by the floor and ceiling limits (8 cents per Mcf above or below the average FT-R toll) to determine the constrained tolls for each receipt station.

3.2.1.2 FT-D Service – Toll Determination

Pipe diameter and the unit cost index do not play a role in the determination of the FT-D tolls. Distance of haul data referenced in the FT-R toll determination is used to allocate the transmission component among the three groups of delivery points. The transmission component of the FT-D toll is allocated to the delivery groups based on the relative distance of haul of the Group 1 delivery locations compared to the average distance of haul for the combined Group 2 and Group 3 delivery locations. The FT-D Group 1 tolls are delivery point specific with a floor toll equal to the FT-D Group 2 toll. The FT-D Group 2 toll is a postage stamp toll. The Group 3 toll is also a postage stamp toll with a 20 per cent premium over the FT-D Group 2 toll.

3.2.1.3 Selected North Montney Receipt Points and Illustrative Tolls

Throughout the Hearing, participants provided the Board with considerable analysis and commentary relating to tolls forecast for the Project. This commentary and analysis included, but was not limited to, the changes in 2019 to tolls at receipt points on the Project after the start of deliveries to the PRGT pipeline at the Mackie Creek Interconnection, and comparisons of tolls for the Project to tolls on the existing system using NGTL's existing tolling methodology.

NGTL provided illustrative annual FT-R tolls, using the applied for tolling methodology, for receipt points on the Project and on the Groundbirch Mainline (see Table 3-1).

Table 3-1: Illustrative Receipt Tolls (FT-R)
Using NGTL's Applied for Tolling Methodology

North Montney Project:		2016	2017	2018	2019	2020	2024	2028
Altares Receipt Point	$/Mcf	0.293	0.291	0.286	0.170	0.161	0.159	0.159
	$/10^3 m^3	10.34	10.27	10.10	6.00	5.68	5.61	5.61
Kobes Receipt Point	$/Mcf	N/A	0.291	0.295	0.180	0.170	0.168	0.168
	$/10^3 m^3	N/A	10.27	10.41	6.35	6.00	5.93	5.93
Gundy Receipt Point	$/Mcf	0.293	0.291	0.299	0.185	0.174	0.172	0.172
	$/10^3 m^3	10.34	10.27	10.55	6.53	6.14	6.07	6.07
Aitken Creek East Receipt Point	$/Mcf	N/A	N/A	N/A	0.188	0.178	0.176	0.176
	$/10^3 m^3	N/A	N/A	N/A	6.64	6.28	6.21	6.21
Aitken Creek Interconnect Receipt Point	$/Mcf	0.293	0.291	0.299	0.188	0.178	0.176	0.176
	$/10^3 m^3	10.34	10.27	10.55	6.64	6.28	6.21	6.21
Aitken Creek West Receipt Point	$/Mcf	N/A	N/A	N/A	0.192	0.181	0.179	0.179
	$/10^3 m^3	N/A	N/A	N/A	6.78	6.39	6.32	6.32
Blair Creek East Receipt Point	$/Mcf	N/A	0.291	0.299	0.194	0.183	0.180	0.180
	$/10^3 m^3	N/A	10.27	10.55	6.85	6.46	6.35	6.35
Blair Creek Receipt Point	$/Mcf	N/A	0.291	0.299	0.195	0.184	0.181	0.182
	$/10^3 m^3	N/A	10.27	10.55	6.88	6.50	6.39	6.42
Halfway River Receipt Point	$/Mcf	N/A	0.291	0.299	0.201	0.190	0.187	0.187
	$/10^3 m^3	N/A	10.27	10.55	7.10	6.71	6.60	6.60
Beatton River Receipt Point	$/Mcf	N/A	0.291	0.299	0.206	0.195	0.192	0.192
	$/10^3 m^3	N/A	10.27	10.55	7.27	6.88	6.78	6.78
Lily Receipt Point	$/Mcf	N/A	0.291	0.299	0.206	0.195	0.192	0.192
	$/10^3 m^3	N/A	10.27	10.55	7.27	6.88	6.78	6.78
Mason Creek Receipt Point	$/Mcf	N/A	0.291	0.299	0.213	0.202	0.199	0.199
	$/10^3 m^3	N/A	10.27	10.55	7.52	7.13	7.02	7.02
Buckinghorse River Receipt Point	$/Mcf	N/A	0.291	0.299	0.215	0.203	0.201	0.201
	$/10^3 m^3	N/A	10.27	10.55	7.59	7.17	7.10	7.10
Kahta Creek Receipt Point	$/Mcf	N/A	0.291	0.299	0.218	0.206	0.203	0.204
	$/10^3 m^3	N/A	10.27	10.55	7.70	7.27	7.17	7.20
Kahta North Receipt Point	$/Mcf	N/A	N/A	N/A	0.218	0.206	0.203	0.204
	$/10^3 m^3	N/A	N/A	N/A	7.70	7.27	7.17	7.20

North Montney Project:		2016	2017	2018	2019	2020	2024	2028
	$/10^3m^3	N/A	N/A	N/A	7.70	7.27	7.17	7.20
Groundbirch Mainline:								
Saturn	$/Mcf	0.289	0.286	0.266	0.277	0.262	0.258	0.258
	$/10^3 m^3	10.20	10.10	9.39	9.78	9.25	9.11	9.11
Tremblay	$/Mcf	0.276	0.273	0.253	0.264	0.250	0.246	0.246
	$/10^3 m^3	9.74	9.64	8.93	9.32	8.83	8.68	8.68
Groundbirch	$/Mcf	0.282	0.280	0.260	0.271	0.256	0.252	0.252
	$/10^3 m^3	9.95	9.88	9.18	9.57	9.04	8.90	8.90
Groundbirch East	$/Mcf	0.282	0.280	0.259	0.271	0.256	0.252	0.252
	$/10^3 m^3	9.95	9.88	9.14	9.57	9.04	8.90	8.90
Gordondale East	$/Mcf	0.273	0.270	0.250	0.261	0.247	0.243	0.243
	$/10^3 m^3	9.64	9.53	8.83	9.21	8.72	8.58	8.58

Amounts converted to $ per 10^3 m^3 by multiplying the $ per Mcf by 35.301

Sources: NGTL response to Westcoast Round 1 IR 1.06, Table 1.6-1: Illustrative Receipt Rates, (A3Y0H0); IR 1.07, Table 1.7-1: Illustrative Receipt Rates, (A3Y0H0).

NGTL provided an estimate of stand-alone tolls for the Project that included both receipt and delivery costs for gas received from the Aitken Creek and Kahta production areas for delivery to the Mackie Creek Interconnection or to near the existing receipt point at Saturn (see Table 3-2). These stand-alone tolls would be paid in addition to any further tolls charged for access to the NGTL System and the NIT market. In 2020, gas flowing to NGTL and the NIT market would then be subject to tolls of $0.25/mcf (Table 3-2) and an additional FT-R toll of $0.262/mcf at Saturn (Table 3-1).

Table 3-2: NGTL's Illustrative Stand-Alone Tolls Using Project Costs and Volume Assumptions

North Montney Project:		2016	2017	2018	2019	2020	2023-2027*	2028-2032*
Stand-Alone Toll	$/Mcf	1.291	0.509	0.344	0.256	0.250	0.243	0.227
	$/10^3 m^3	45.57	17.97	12.14	9.04	8.83	8.58	8.01

Note *: Period Averages

Amounts converted to $ per 10^3 m^3 by multiplying the $ per Mcf by 35.301

Source: NGTL response to NEB IR 2.42, Table NEB 2.42-1: Stand-Alone Toll using Project Cost and Volume Assumptions, (A3V4S2).

NGTL also provided illlustrative path distances to Empress/McNeill and Alberta/BC delivery points for various receiipt points on the Project and on the Groundbirch Mainline for the periods before and after the Mackie Creek Interconnection is forecast to be operational (see Table 3-3).

Table 3-3: Illustrative Average Path Distances (km)

Receipt Point	2016 - 2018	2019 - 2028
Kahta Creek Receipt Point	1,385	802
Aitken Creek Interconnect Receipt Point	1,266	683
Altares Receipt Point	1,190	607
Saturn Receipt Point	1,084	1,084
Groundbirch Receipt Point	1,061	1,061

Sources: NGTL response to Westcoast Round 1 IR 1.06, Table1.6-2: Illustrative Average Path Distances, (A3Y0H0); IR 1.07, Table1.7-2: Illustrative Average Path Distances, (A3Y0H0).

3.3 Views of the Participants on Tolls and Service Proposal

Views of NGTL

NGTL proposed that the Board consider the Application in two steps:

- first, that the Board determine whether the costs of the Project should be included in the cost pool for the entire NGTL System; and
- second, if the costs of the Project are included in the cost pool for the entire NGTL System (i.e., if the first step is satisfied), that the Board determine whether application of the NGTL System rate design to the Project facilities is consistent with the Board's tolling principles.

The evidence provided by NGTL included expert testimony from Mr. John J. Reed.

Step 1: Rolling in Costs of Project

For the first step, NGTL indicated that the Board has consistently approved treating the costs of pipeline extensions on a rolled-in basis where the extension is integrated with the remainder of the system and the nature of service offered on the extension is consistent with the existing services offered.

Integration

NGTL submitted that the Project will be physically and operationally integrated with the NGTL System. Throughout the Hearing, NGTL provided evidence in support of this position.

In particular, NGTL's expert witness, Mr. Reed, stated the Project facilities will:

- have high physical and operational integration with the NGTL System, and the nature of the service will be the same;

- be physically interconnected with the NGTL System such that both new and existing facilities can be jointly used;
- be broadly available to serve many shippers; and
- provide an additional source of supply to the NGTL System.

Mr. Reed contended that the Project facilities will not be used separately from the existing NGTL System and noted that the additional compressor stations are bi-directional, which will allow gas to flow from the Project facilities to the existing NGTL System and vice versa.

NGTL further submitted that the System will continue to be optimized and dispatched on an integrated network pipeline basis, and that the natural gas received from the Project will provide additional supply sources on the NGTL System to serve multiple domestic and export markets. NGTL contended that integration does not depend on whether the Mackie Creek Interconnection physically receives most or all of its physical supply from BC receipt locations at any given time.

In regard to operational integration, Mr. Reed submitted that NGTL cannot provide the service requested by Progress if the Project is to be operated as a system separate from the NGTL System. According to Mr. Reed, the NGTL System is an integrated system and in order for gas to flow into the NIT market and benefit the rest of the System, it must be operated on an integrated basis.

Effectively, the NIT market operates everywhere on the NGTL System. There is no path to a specific location for the NIT market in the receipt toll algorithm. When gas is received on the NGTL System, the gas is recorded in a NIT account, and that customer then can nominate out of that NIT account or trade through a NIT account to a different party. A party holding delivery services can take delivery of gas from its NIT account after it has been placed there through the party's own proprietary supply coming on at a receipt location or through purchase from another party.

FT-R service to Progress will provide gas to the NIT market, inherently involving the rest of the NGTL System. FT-D service will also access gas from the NIT market. In this way, NGTL argued, the Project will be integrated with NGTL's existing facilities, because the rest of the NGTL System is necessary in order for the service requests that underpin the Project to be met.

NGTL indicated that volumes on other systems can and do access the NIT market, but only where shippers pay a toll on the other system and on the NGTL System (i.e., stacked tolls). This gas entering from other systems is commingled with other gas on the NGTL System and is traded on the NIT market. If stacked tolls are implemented for the Project, commingling of gas would occur at Saturn. NGTL acknowledged that, generally, access to the NIT market costs less if a shipper connects directly to the NGTL System, rather than through a connecting system. As a result, NGTL has an advantage in providing a path on one pipeline system to access the NIT market.

Mr. Reed indicated that shippers may put less gas into the NIT market if there were stacked tolls, unless a transportation by others (TBO) arrangement was implemented.

Services

NGTL stated that the services to be provided to all shippers on the Project facilities are not distinct or custom services; rather these services are exactly the same services provided to all other shippers on the NGTL System pursuant to the NGTL tariff. In addition, NGTL submitted that the service that it provides to all of its customers is distinct from services provided by other companies serving Northeastern BC as the NGTL System is designed as not only a transportation service, but also a fully integrated market hub.

NGTL stated that its customers contract separately for receipt and delivery services on the NGTL System. Gas supply is available for purchase and sale in the NIT market immediately upon receipt on the NGTL System until it is delivered from the NGTL System at a delivery point. Virtually all receipts onto the NGTL System flow into the NIT market and virtually all deliveries flow out of it as they leave the NGTL System. This separation allows gas received at any receipt location to be available for delivery at any delivery location. NGTL indicated that, although Progress could have pursued this Project as a point-to-point 'bullet line', it chose to pay more to contract for service on the NGTL System so that it could sell gas into and source gas from the NIT market. In addition, while Progress has contracted for delivery service at the Mackie Creek Interconnection, it has explicitly indicated in its evidence that it is seeking access to and from the NIT market through separate FT-R and FT-D contracts, and not a points-to-point service or pathed service. NGTL indicated that other shippers are not prohibited from contracting for delivery service at the Mackie Creek Interconnection.

Step 2: NGTL Tolling Methodology and Tolling Principles

Upon concluding that the Board should determine that costs of the Project should be included in the cost pool for the entire NGTL System, NGTL submitted that the application of the NGTL tolling methodology to the Project is consistent with the Board's tolling principles.

Cost Causation, Cross-Subsidization, and Risk

NGTL argued that the application of the existing tolling methodology to the Project satisfies the cost causation principle because its current toll design represents a balanced allocation of costs that reasonably reflects the primary cost drivers on the NGTL System, i.e. distance, diameter, and contract demand for services provided at points on the Project. Further, NGTL's stated that the evidence demonstrates that there will not be any cross-subsidization by existing NGTL shippers through application of the existing tolling methodology to the Project facilities, as the revenues from the subscribed capacity reasonably reflect the costs associated with the Project over the life of the Project, and will in fact lower overall NGTL System tolls (after the contract demand ramp-up period) through at least the term of the initial contracts.

NGTL noted that the Project facilities are required in order to meet the service requested, and that the total capacity of the new facilities (2.4 Bcf/d) closely matches the capacity of the contracts underpinning NGTL's proposed investment (more than 2.0 Bcf/d). Project capacity that is not otherwise underpinned by shipper service commitments is reasonably considered incidental. As a result, little capacity could be deemed "excess", so existing shippers will not bear the risk of recovering such costs in their tolls. In addition, because there is alignment between the subscribed capacity and the contractual underpinning of the Project, and that shippers utilizing the Project facilities will pay tolls that reasonably reflect the cost of the

additional facilities, NGTL argued that cross-subsidization would be minimized between existing shippers and new shippers.

In particular, NGTL compared the net present value (NPV) of the Project revenue with the NPV of the cost of service (COS) for the full 40-year life cycle of the Project facilities. The ratio of NPV of the revenue to the NPV of the COS was estimated to be 0.91. NGTL stated that the assumptions that it used for this calculation were conservative and that it is reasonable to assume that additional contracting will occur (either contracts will be renewed in this area and/or other customers will contract for service to use the Project facilities). These additional factors are not captured in the ratio analysis and, NGTL submitted, could result in additional revenue contributions to the NGTL System resulting from the Project. NGTL suggested that it would not be appropriate to require that the ratio on new facilities be equal to or exceed 1.0 in order for approval to be authorized. Such an approach would be tantamount to requiring stand-alone tolling for many extension facilities.

NGTL stated that the annual revenues from the Project are expected to exceed the annual incremental costs of the Project, resulting in net long term toll reduction for all NGTL shippers. However, NGTL provided no evidence that prior to 2019, there is incremental delivery contract revenue. Annual receipt contract revenue also does not exceed incremental costs in these years (i.e., the years prior to gas flowing through the Mackie Creek Interconnection).

NGTL stated that should Progress or other shippers decide not to proceed with the Project, the termination provisions of the Progress receipt and delivery Project Expenditure Authorizations (PEAs) ensure that existing shippers will not be at risk for recovery of any of the costs incurred during the development phase. However, after the Project is placed into service, existing shippers will be at risk for cost recovery and the existing tariff would apply to Progress in the same manner as NGTL's existing shippers. Mr. Reed acknowledged that there is a risk of future non-payment associated with any shipper on the NGTL System. While the new facilities are largely underpinned by a single entity, Progress, NGTL submitted that this risk is offset by the creditworthiness of Progress and its parent, PETRONAS.

NGTL took issue with several positions put forth by some Intervenors regarding the allocation of costs and risks among shippers on the Project and existing NGTL shippers. NGTL summarized Intervenors' concerns as: 1) the application of ceilings to the FT-R toll; 2) the designation of Mackie Creek Interconnection as a Group 1 delivery point; 3) reflection of distance and diameter in setting FT-R rates; and 4) cross-subsidization by existing NGTL shippers.

Regarding the application of ceilings to the FT-R toll, NGTL pointed out that although unconstrained tolls will slightly exceed the FT-R ceiling toll at some of the Project receipt points prior to the designation of the Mackie Creek Interconnection as a Group 1 delivery point (i.e. 2016 – 2018), the unconstrained tolls for all receipt locations on the Aitken Creek and Kahta Sections of the Project will be below the FT-R ceiling toll and will be closer to the average after 2019. As a result, NGTL submitted, the application of ceiling tolls will have minimal impact on the Project.

Regarding the designation of Mackie Creek Interconnection as a Group 1 delivery point, NGTL stated that the Mackie Creek Interconnection simply meets the requirements for designation as a Group 1 delivery point. Whether the Mackie Creek Interconnection physically receives most or all of its physical supply from BC receipt locations at any given time does not differentiate it from the other Group 1 delivery locations (i.e., the Mackie Creek Interconnection is not

substantially different from the other Group 1 delivery points because no Alberta sourced gas supplies would be delivered to the Mackie Creek Interconnection).

Regarding the role of distance and diameter in setting FT-R rates, NGTL submitted that its tolling methodology reasonably allocates costs to each receipt point based on the facilities designed and utilized to transport gas from these receipt points to delivery points. Accordingly, if the distance from the receipt points on the Project to the Group 1 delivery points is shorter than from other receipt points, it also follows that the receipt tolls for those receipt points would also be lower relative to other receipt points on the system that have a longer distance.

Further, NGTL submitted that the addition of the Mackie Creek Interconnection as a Group 1 delivery point does not change the overall commercial construct related to the Project. It simply alters the location where the additional delivery revenue is expected and provides the additional revenue certainty associated with the FT-D contracts.

Several Intervenors pointed out that gas from the North Montney region will flow up to 300 km farther than gas delivered on the system at Saturn, at about the same or lower tolls. However, NGTL stated that this mischaracterizes the nature of the NGTL tolling methodology. NGTL took the position that the difference in FT-R tolls among various points reflects the difference in the allocation components (i.e. distance and diameter). In NGTL's view, the resulting tolls reflect the cost of providing service on the entire NGTL System because they are determined consistently with all other receipt points on the System and reflect the relative usage of the system based on appropriate cost drivers. Further, NGTL submitted that the Intervenors' position was fundamentally flawed as it assumed that the Mackie Creek Interconnection is downstream of receipt points on the Project when, in fact gas can flow in either direction on the Project.

Finally, NGTL submitted that cross-subsidization is inherent in any rolled-in toll design; however, cross-subsidization would be minimized in this case because the incremental revenues resulting from the Project will reasonably recover, and potentially exceed, the cost of the Project (i.e., on a NPV basis, the revenues from the contracts executed to date are expected to reasonably recover the cost of the new facilities).

NGTL stated that the concern about allocation of costs among NGTL System shippers relates to the allocation of costs among receipt shippers. NGTL submitted that the Board should take notice that no receipt shippers on the NGTL System have objected to the Project. NGTL further submitted that several receipt shippers on the NGTL System intervened in support of the Project.

Economic Efficiency

NGTL stated the Project is consistent with promoting economic efficiency, including promoting proper price signals and not creating competitive distortions or unreasonably advantaging NGTL regarding new infrastructure development. Because of the alignment between the costs and revenues associated with the Project, NGTL submitted that the application of its existing tolling methodology to the Project will not result in growth on the NGTL System being subsidized by existing shippers. As such, NGTL will not have an unfair competitive advantage over other pipeline companies serving Northeastern BC, nor will it inappropriately entice volumes away from them. NGTL further submitted that proper price signals will also protect against over-investment and promote the efficient development of the NGTL System.

Unjust Discrimination

NGTL submitted that the tolling relief requested in its Application is akin to a request for an affirmation of the Board that the Board will not unduly distinguish the Project facilities from other facilities that comprise the NGTL System. The Project facilities will be an integral component of the NGTL System and, as such, NGTL believes that the allocation of impacts, including benefits, burdens, and risks of the facilities should be no different than the allocation applicable to other NGTL System facilities.

For decades, the costs of expansions and extensions have been rolled into the costs of the NGTL System as a whole. NGTL suggested that setting different rates for shippers on different segments of the System would undermine the commercial model of the System, which is that shippers may commercially access supply from any point on the System without paying stacked tolls for standard FT-R and FT-D service.

Competition

NGTL acknowledged that the Project would compete with other natural gas pipelines in Northeastern BC, such as those owned by Westcoast Energy Inc. (Westcoast) and Alliance Pipeline Ltd. (Alliance). However, NGTL submitted that the proposed tolling structure did not give it an unfair competitive advantage because the costs and revenues associated with the Project were aligned.

NGTL argued that the two primary markets available to gas producers in Northeastern BC are the NIT market, accessed through the NGTL System, and Station 2, accessed through the Westcoast System. NGTL considered Westcoast's claims that the Project will result in the underutilization and stranding of Westcoast's existing pipeline and processing facilities in the region to be unfounded. NGTL noted that Westcoast has existing facilities connected to a significant resource base and a large stable market, and offers the lowest cost transportation option to transport gas between the two. Consequently, claims that the Project will result in underutilization of Westcoast's existing facilities ring hollow, regardless of how the Project facilities are tolled.

Further, NGTL said Westcoast, Alliance, NGTL and other companies currently compete to transport sales gas in Northeastern BC. NGTL's success in being selected to build the Project was due in part to the offering of seamless access to the NIT market, which is highly liquid. NGTL noted that Westcoast is contractually full[3] and Alliance, in its new tolling proposal, is developing tools to compete more effectively. NGTL asserted that each party competing develops its own business model, tolling structure and service offering to successfully attract customers. Fundamentally, NGTL said that some Intervenors were seeking to change NGTL's overall, long-standing tolling methodology and business model to enhance their own competitive positions.

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[3] Painted Pony Petroleum Ltd. provided a Letter of Comment to the Board expressing concerns that there was no available capacity for Firm T-North Long Haul Service on certain paths on Westcoast's system. Black Swan Energy Ltd. provided a Letter of Comment to the Board expressing concerns that existing pipeline infrastructure in the area is fully contracted and will only allow incremental volumes to flow on an interruptible basis.

NGTL indicated that to the extent that the Project will have any adverse impacts on competitors or their users, those impacts are properly addressed through consideration of each competitor's circumstances – not by requiring NGTL to conform to another party's tolling model.

Views of Progress

As the Project's anchor shipper, Progress supported NGTL's proposal regarding the tolling for the Project. The evidence provided by Progress included expert testimony from Mr. Mark Drazen.

Progress stated that a key criterion for selecting a pipeline to transport North Montney gas was seamless access to a liquid natural gas market hub. Progress indicated that the NIT market provides security and market flexibility both prior to, and after, it begins shipping gas to the PNW LNG Facility via the PRGT pipeline. Rolled-in tolling significantly reduces the cost of accessing the NIT market, and market flexibility associated with the access to the NIT market will increase Progress' wellhead netbacks.

Progress said that access to the NIT market is critical to the viability and sustainability of an integrated LNG project of this magnitude even though most, if not all, of its North Montney production is expected to physically flow to the PRGT pipeline for export. Specifically, Progress provided evidence that it anticipates that the PNW LNG Facility will run at a high annual load factor, as will the upstream production facilities that provide the necessary liquefaction feedstock. Nevertheless, there will be periods of scheduled maintenance and unplanned outages at the PNW LNG Facility during which it will be necessary to have access to a liquid market to either buy or sell gas to manage operational fluctuations. For this reason, Progress described the Mackie Creek to Saturn portion as critical infrastructure that would give Progress access to a large liquid hub to monetize its resources in the intra-Alberta and export markets and, also access to gas storage. As the NIT market is one of the largest natural gas physical trading hubs in North America, Progress submitted that the NIT market will allow it to manage supply and demand fluctuations effectively.

Progress stated that tolling the Project using stand-alone or incremental tolling accompanied by an additional FT-R and FT-D toll to gain essential access to the existing NGTL System would impose an estimated additional $1.85 billion cost on the PNW LNG Project. When considered together with other costs and revenue projections, the additional burden has the potential to materially contribute to a negative final investment decision (FID).

Cross-Subsidization

On the topic of cost allocation, Progress noted that even under the assumption that all of its North Montney gas physically flows only to the Mackie Creek Interconnection, under NGTL's tolling methodology, the receipt tolls for those Project receipts are based on cost of haul that includes paths to the Eastern Gate and Western Gate.

Mr. Drazen submitted that it is likely that many facility additions will have a ratio of NPV Revenue to NPV COS lower than one because of the effects of inflation and depreciation. Tolls are based on the depreciated original (i.e., embedded) cost of facilities, whereas any current addition reflects the undepreciated cost of new facilities. A combination of inflation and depreciation means that the initial cost of an addition will almost always be higher than existing facilities of the same type. Accordingly, a ratio less than unity may be nothing other than a

demonstration that the system average original cost depreciated is less than the cost of new facilities. As a result, it does not mean that the specific addition is not economic. It does mean that average tolls will increase, but that is not a measure of feasibility.

Unjust Discrimination

Progress stated that the NGTL System has historically been developed through rolled-in expansions and extensions to connect new gas supply to existing markets, as well as new ones. The NGTL System has been extended to connect BC gas supply (e.g. NGTL's Groundbirch Mainline and Horn River projects), treating it no differently than Alberta supply. Progress submitted that to treat its North Montney gas reserves any differently would constitute unjust discrimination in the provision of service by NGTL.

Competition

Progress held a competitive process between Spectra, Westcoast's parent company, and NGTL to construct facilities to tie into the PRGT pipeline at the Mackie Creek Interconnection, as well as to interconnect to the existing NGTL System. NGTL, as evidenced by this application, was successful in this competition. Progress said NGTL was willing and able to meet Progress' service requirements, while Westcoast was not prepared to consider any new service paradigm, would not accept a lower return, and could not provide any degree of certainty of delivery of high heat content gas to the PNW LNG Facility.

However, NGTL's success in this competition does not mean that Progress will exclusively ship its sales gas on NGTL. Progress noted that it is currently the largest firm service shipper on Westcoast's T-North system with long haul capacity of about 565 MMcf/day under contract and 300 MMcf/day of this capacity remains under contract until 2032. Progress also said it expected to expand its use of Westcoast's raw gas gathering and processing services.

Progress noted that competition in Northeastern BC occurs not only among pipelines, but also among major LNG projects. Progress said that delaying or stopping the PNW LNG Project by delaying or stopping the North Montney pipeline would benefit Westcoast's partner and Progress' competitor, BG Canada, which intends to contract with Westcoast for the 4 bcf/d Westcoast Connector pipeline.

Views of the Canadian Association of Petroleum Producers (CAPP)

CAPP represents companies, large and small, that explore for, develop, and produce natural gas and crude oil throughout Canada. CAPP's member companies produce about 90 per cent of Canada's natural gas and crude oil. CAPP supported Board approval of tolling for the Project as proposed, with a roll-in of Project costs. CAPP stated that the Project has substantial contractual underpinnings that will produce revenues that exceed the COS of the Project in a relatively short period of time. The magnitude of the economically recoverable resource and market opportunities provide reasonable assurance that the facilities will be utilized over the long term.

Views of Alliance Pipeline Ltd. (Alliance)

Alliance, a pipeline company and one of NGTL's competitors in Northeastern BC, said that the applied-for tolling methodology for the Project would be detrimental to the competitive environment in Northeastern BC, which included Alliance's pipeline. However, Alliance agreed

with NGTL that fair competition did not require competing pipelines to have identical tolling models; rather, pipelines should be expected to pursue novel services in order to be more competitive.

Alliance Tolling Features

Alliance recently applied to the Board for New Services and Related Tolls and Tariffs. The proceeding is currently underway and a decision has not yet been made by the Board. In its application, Alliance proposed fixed tolls for medium and long-term firm service. Shippers would have toll certainty for the term of their firm service contracts and would share no risk associated with Alliance's level of contracting with other shippers or the level of utilization of other customers. Alliance described this tolling as stand-alone tolling where the preponderance of cost risk is on the pipeline instead of the shipper.

Alliance does not roll in the facility-related costs of new shippers to the existing rate base; instead Alliance's policy is that expansions driven by a requesting party are paid for by that party.

Views of ATCO Gas, a division of ATCO Gas and Pipelines Ltd. (ATCO)

ATCO, a distributor of natural gas throughout most of Alberta and a significant FT-D3 toll payer on the existing NGTL System, opposed NGTL's proposal regarding the tolling for the Project.

Services

ATCO stated that it is important to appreciate the unique contractual design that NGTL has customized for the Project. That customization distinguishes the service and its physical flow of gas relied upon to justify the Project. In effect, the combination of those unique FT-D1 and FT-R services under the PEAs reveal a predominately intra-segment use of the Project facilities.

Cross-Subsidization

In addition, ATCO based its opposition on the fact that the predominant purpose of the Project is to deliver gas in the opposite flow direction from the FT-D3 market in Alberta to the PNW LNG Facility, which will be located on the distant west coast of BC. ATCO had concerns related to the costs Alberta customers might be expected to bear under the proposed rolled-in tolling methodology during and after the initial term of the Project's contracts.

ATCO stated that if an LNG shipper such as Progress commenced a 20-year delivery contract at the Mackie Creek Interconnection and something occurs between now and 2040 that causes Progress not to renew its delivery contact, roughly half of the pipeline costs, assuming a 39-year depreciation period, will remain to be recovered from remaining shippers. ATCO's market requirements are long term. Should the remaining costs of the Project be reallocated over fewer billing determinants (e.g. decreased contract demand quantities), resultant tolls to FT-D3 customers could increase considerably.

ATCO submitted that, should the Board grant NGTL's proposed tolling for the Project, Project costs will be recovered from FT-D3 shippers who derive, at most, only incidental benefit from the proposed facilities and services. ATCO stated that the cost-based/ user pay principle strongly suggests Project shippers should be responsible for bearing all the Project costs.

Views of Export Users Group (EUG)

EUG opposed NGTL's proposal regarding the tolling for the Project. The members of EUG, directly or indirectly, either hold T-South capacity on the Westcoast pipeline system as well as export delivery capacity (FT-D1) on the existing NGTL System, or rely heavily on gas supply originating on these systems, having firm receipt capacity on downstream pipelines.

Services

EUG submitted that Progress is not precluded from seeking to accomplish points-to-point (i.e., pathed) service as its primary objective. EUG further submitted that FT-R service on the Kahta Creek North Meter Station to Mackie Creek Interconnection segment (Kahta to Mackie Creek) and FT-D service at the Mackie Creek Interconnection may be used to effectively achieve points-to-point or pathed service.

Competition

EUG stated that it is concerned by the prospect of underutilization and decontracting of Westcoast's existing facilities, thereby threatening economic access to gas supplies that are vital to the continuing operations of its members. Gas producers wish to move their gas to a market through the least expensive route. Pricing incremental facilities with rolled-in tolling gives NGTL an insurmountable advantage in connecting new gas supplies.

Proposed Tolling Alternatives

EUG submitted that stand-alone tolling of the Project facilities is essential to create a level playing field in Northeastern BC that will enable NGTL, Westcoast, and others to truly compete. EUG requested that the Board find that the prudently incurred costs required to provide service on the Project facilities may not be included in the determination of the NGTL System revenue requirement and provide guidance that stand-alone tolling would be appropriate for the Project.

Views of FortisBC Energy Inc. (FortisBC)

FortisBC, a shipper on both Westcoast and NGTL, took the position that the tolling methodology that NGTL proposed for the Project is not appropriate. The evidence provided by Fortis BC included expert testimony from Dr. Jeff D. Makholm.

FortisBC stated that it supports the construction of LNG facilities and the development of gas transportation infrastructure in BC to serve both existing markets and the developing LNG export market on the west coast of BC. FortisBC was concerned with NGTL's proposal to make use of a tolling methodology that was developed for NGTL facilities in Alberta and that was developed at a time when the transportation of gas from Northeastern BC to the west coast for export was not contemplated. FortisBC further stated that it is concerned that the application of the proposed tolling methodology to the Project will negatively impact FortisBC's ability to continue to access natural gas supply for its customers at fair market prices, reduce liquidity at the Station 2 market hub, and unfairly increase FortisBC's cost of holding firm transportation capacity and storage resources that are required to meet the needs of its natural gas customers in BC.

Integration

FortisBC stated that the Project is vastly different from the NGTL System facilities for which NGTL's current toll design was developed.

FortisBC explained that when the Board approved the tolling methodology for the NGTL System, the only pipelines owned or operated by NGTL were in Alberta (Alberta System). The Alberta System consisted of a network of pipelines, including laterals that received gas produced by hundreds of shippers from production areas throughout the province of Alberta. As described by NGTL in its application to the Board for approval of a tolling methodology for the Alberta System, that System was primarily designed to transport natural gas to export points on Alberta's southeastern and southwestern borders. FortisBC stated that the Project facilities are not in Alberta and do not comprise part of a network of pipelines that receives gas from multiple production areas and a large number of shippers. The Project is intended to receive gas from one production area (North Montney) and is not primarily designed to transport natural gas to export points in southern Alberta. Almost all of the gas to be received by NGTL for transportation on the Project facilities will be under contracts with one shipper.

FortisBC submitted that at the heart of the NGTL's integration argument is the proposition that integration exists if shippers have access to the NIT market; in other words, that the NIT market creates integration. However, it contended that the NIT market is made possible by the NGTL System tolling methodology, not the facilities. Further, in its view, the Project will not benefit the NIT market, as there will be limited increase in the supply that can be bid on by other market participants, since most volumes will move to the PNW LNG Facility.

FortisBC stated that the Kahta to Mackie Creek segment of the Project is not part of an integrated network of facilities to move gas towards export points in southern Alberta or the intra-Alberta market. This Kahta to Mackie Creek segment only moves gas south from North Montney production areas, and only gas produced in the North Montney producing area can be transported through this segment. It is also apparent that the segment from Mackie Creek to Saturn is not necessary for the operation of the Alberta System as little gas will flow between the new facilities and the existing Alberta system after 2019.

Dr. Makholm stated that a key question for assessing integration of a system is whether the prospective pipeline system needs the existing system, or vice versa. In the case of the Project, Dr. Makholm stated that Progress gas is heading to the west coast of BC, and that any movement into, or out of, Alberta after 2019 appears to be incidental and could be easily handled by pipelines already in the region, rather than through a new and expensive line connecting Mackie Creek to Saturn.

Services

Fortis BC argued that the service proposed for 96 per cent of the gas volumes is essentially a points-to-point service from its North Montney receipt points to the interconnection with a pipeline that will not be open-access. This service is very different from the service offered by NGTL on its Alberta System where the majority of gas moves to export delivery points that connect to open-access pipelines and which are available to a multitude of shippers.

Cross-Subsidization

FortisBC submitted that NGTL's proposal diffuses future cost and risk responsibility for extensive pipelines facilities, such as the Mackie Creek to Saturn segment, that clearly have no contractual coverage. FortisBC expressed concern that subsidization of the Project facilities would result from the shifting of long-term risks to all shippers on the NGTL facilities.

FortisBC indicated that the level of contracted flows that will use the Mackie Creek to Saturn segment does not support the cost to construct and operate those facilities, and does not support the construction of a NPS 42 pipeline if tolled on the basis proposed by NGTL.

FortisBC submitted that it is only because NGTL is proposing to roll in and apply its tolling methodology to all of the Project facilities (i.e. combining the Kahta to Mackie Creek segment and the Mackie Creek to Saturn segment) that NGTL is able to claim that cross-subsidization by existing shippers is minimal.

Dr. Makholm also disputed the relevance and accuracy of NGTL's NPV Revenue/NPV COS ratio calculation of 0.91. He submitted that in the event that Progress decides to shift some of its secondary term receipt service to points outside of the Kahta to Mackie Creek segment, it will no longer be covering a portion of the costs – a fact not incorporated into the 0.91 calculation. He stated that NGTL's NPV Revenue/NPV COS ratio calculation may indicate that shippers on the NMML are bearing many of the costs of the new facilities, but not bearing the costs of the existing NGTL facilities.

FortisBC noted that the receipt toll paid by Progress decreases when the Mackie Creek Interconnection is designated as a Group 1 delivery point. The Mackie Creek Interconnection provides value to Progress since it allows gas from Progress' proprietary production to flow to its intended destination, the PNW LNG Facility.

Economic Efficiency

Dr. Makholm stated that rolled-in price signals can promote inefficiency if prices are lower than actual expansion costs or, as in the case of the Mackie Creek to Saturn segment, certain newly-constructed pipelines are somehow offered to new shippers at essentially no cost. Using NGTL's tolling methodology for the Project creates a situation in which the costs of building the Project facilities are spread out such that shippers on these facilities are not fully paying for the service that they are receiving or, if they do pay for a particular segment (like the segment north of Mackie Creek Interconnection), they do not pay for service on the existing system. The result of this situation is to effectively lower price below costs, harming competition in the region.

Competition

FortisBC said that the Project would be in direct competition with well-established and regulated pipelines in the region: Westcoast and Alliance. FortisBC shared concerns that the Project would allow shippers to use the Project rather than Westcoast's T-North to transport gas to the NGTL System and bypass the Westcoast system, and that this would decrease the supply at Westcoast's Station 2 market hub. This decreased supply would reduce liquidity in the Station 2 market, potentially increasing costs to FortisBC, which considers itself to be a captive shipper on Westcoast.

Dr. Makholm said that the proposed tolling methodology skewed the competitive playing field in favour of those pipeline companies with the largest, partly-depreciated rate base, like NGTL, as the costs and risks of developing new and distant gas fields would be spread across the entire NGTL System. Dr. Makholm said that roll-in for extension of pipelines into new regions can be a potent barrier to competitive entry into those regions and will likely cause harm to existing competitors by providing an unfair regulatory advantage. He argued that low rolled-in prices will encourage both excess pipeline building and underutilization of current capacity.

FortisBC said that harm does not generally result from direct and fair competition between regulated pipelines vying to serve new territories or increased demand for service. FortisBC also said that in unregulated markets competition may harm less productive or adaptable competitors and potentially drive them from the industry; however, FortisBC noted that this harm to the unproductive competitor is considered a beneficial consequence of competition and a benefit to consumers.

Proposed Tolling Alternatives

FortisBC stated that one possible alternative approach to NGTL's proposed tolling methodology is the establishment of two separate toll zones, one for NGTL facilities in Alberta and another for NGTL facilities in BC. This approach could recognize the very different circumstances that exist in the two provinces.

Dr. Makholm also proposed dividing the Project into two segments - the Kahta to Mackie Creek segment and Mackie Creek to Saturn segment - and tolling the two-segment Project on a stand-alone basis or "at-risk" basis for each segment. He said that Project shippers, when faced with such segmentation, may re-think any commitment to the Mackie Creek to Saturn segment as there are other alternatives to connect volumes that are not expected to flow to the West Coast, but instead to flow to the existing NGTL System.

Views of Westcoast Energy Inc. (Westcoast)

Westcoast, a pipeline company and one of NGTL's competitors in Northeastern BC, opposed NGTL's proposed tolling for the Project. The evidence provided by Westcoast included expert testimony from Dr. Charles J. Cicchetti.

Integration

Westcoast stated that there is not a high degree of physical integration between the Project and the existing NGTL System; therefore, services utilizing the Project facilities should not be rolled-in for tolling. The degree of integration is limited by the fact that there is insufficient downstream capacity on the existing NGTL System to handle the volumes that can be transported on the NMML. The NMML has a diameter of 42 inches and a capacity of 2.4 Bcf/d. The downstream Groundbirch Mainline, which was built to transport gas supply from the Groundbirch area and is fully contracted, has a diameter of 36 inches and a capacity of only 2.0 Bcf/d. The proposed Groundbirch Compressor Station will provide some increased take-away capacity on the existing system, but NGTL's evidence shows that the maximum amount of North Montney supply that can be transported to the Saddle Hills Compressor Station without deliveries to Mackie Creek or "Other LNG" in the design area is nowhere close to 2.4 Bcf/d. Westcoast further stated that Progress expects that once the Mackie Creek Interconnection is in service, most if not all of its 2 Bcf/d North Montney production will physically flow to this point.

Shippers A, B and C have contracted for service totaling 78 MMcf/d. Integration between the Project and the existing NGTL System needs to be evaluated in light of these contract volumes.

Service

Westcoast submitted that the service to be provided to Progress by NGTL is different from FT-R service offered elsewhere on the NGTL System because it is dependent on a very specific FT-D service (i.e., Progress' FT-D service at the Mackie Creek Interconnection). In the case of Progress' FT-R service, because of the downstream capacity constraint on the existing NGTL System, NGTL would not be able to receive 2.0 Bcf/d of gas on a firm basis at North Montney receipt points unless delivery service is nominated at the Mackie Creek Interconnection.

Similarly, Westcoast submitted that the FT-D service is different because it is dependent on a very specific FT-R service (i.e., Progress' FT-R service on the NMML). NGTL cannot provide 2.05 Bcf/d of FT-D service to Progress at the Mackie Creek Interconnection unless Progress nominates sufficient FT-R service on the NMML.

Moreover, Westcoast called attention to NGTL's intention to designate Mackie Creek Interconnection as a Group 1 delivery point, in addition to Empress/McNeill and Alberta/BC, once the PRGT pipeline goes into service. Empress/McNeill and Alberta/BC are interconnection points with downstream open-access pipelines, while the PRGT pipeline is not an open-access pipeline but one that is exclusively dedicated to serving the PNW LNG Facility. Westcoast explained that this makes the FT-D service provided by NGTL at the Mackie Creek Interconnection a Progress-specific FT-D service, unlike the service provided by NGTL at the two existing Group 1 delivery points.

Westcoast noted Progress' statement that, although access to the NIT market is critical to an integrated LNG project of this magnitude, most, if not all, of Progress' North Montney production is expected to physically flow to the PRGT pipeline for export. Westcoast submitted that, by extension, this means that "most, if not all" of Progress' production will not be delivered to the existing NGTL System and will not be physically commingled with gas transported by NGTL on the existing system. Given the design basis for the Project, Westcoast argued that it is clear that Progress' FT-R and FT-D services on the NMML are linked and must be utilized in tandem in order for NGTL to provide service to Progress and to enable Progress to stream its North Montney production to the PNW LNG Facility.

Cross-Subsidization

Dr. Cicchetti stated that the fact that the life cycle revenues associated with the Project facilities might recover the life cycle costs of those facilities does not mean that the tolling treatment for gas that accesses the existing NGTL System satisfies the cost causation principle. If the ratio of NPV Revenue/NPV COS is less than 1.0, it follows that the costs of the new facilities would not be fully recovered and no contribution would be made to recover the costs of the existing system.

Westcoast stated that gas from Project receipt points going into Alberta will use the existing system, but will be charged the same or lower toll than gas that enters the system up to 300 km closer to Alberta. North Montney shippers seeking access to NGTL's downstream markets would pay a near zero incremental toll prior to 2019 and a negative incremental toll after 2019. Westcoast submitted that a toll design that provides zero or less revenue to NGTL from contracts

on the Project relative to comparable contracts on the Groundbirch Mainline, in spite of the extra costs required to build the Project, would involve a significant subsidy for such shipments.

Westcoast submitted that this inconsistency with the cost causation principle is demonstrated by a table provided by Mr. Drazen for Progress[4]. This document showed that if Progress Energy contracted for 2 Bcf/d of receipt service at the Saturn receipt point, it would pay $1.553 billion NPV in receipt revenue, but by contracting for 2 Bcf/d of receipt service at receipt points on the Project, Progress would pay only $1.187 billion NPV in receipt revenue. In other words, Progress would pay $346 million NPV less in receipt revenue, despite the extra cost of $1.7 billion to build the Project.

Further, Westcoast submitted that, under NGTL's proposed toll treatment, the costs of uncontracted capacity on the proposed NPS 42 pipeline would be funded by tolls that all NGTL shippers pay and not by NGTL itself.

Economic Efficiency

Dr. Cicchetti submitted that near zero incremental or decremental tolls cannot and do not provide prospective shippers with appropriate price signals. A toll design that provides zero or less revenue to NGTL from contracts on the Project relative to comparable contracts on the Groundbirch Mainline, in spite of the extra costs required to build the Project, would involve a significant subsidy to ship gas on the Project to the existing NGTL System.

Westcoast stated that NGTL acknowledged the receipt service contracted by Progress and Shippers A, B and C does not change after 2019 compared to the services contracted for before the Mackie Creek Interconnection is operational. After Progress begins shipping gas to the PNW LNG Facility, Project shippers are still entitled to have their gas transported from the North Montney area to the existing NGTL System, for ongoing transportation to downstream markets. Westcoast observed that while their receipt service does not change, the shippers' FT-R tolls decrease significantly. This uneconomic pricing occurs because NGTL introduces the Mackie Creek Interconnection as an FT-D1 (i.e., Group 1) delivery point in its FT-R tolling methodology, which previously only used the Empress/McNeill and Alberta/BC FT-D1 border delivery points. As a result, the diameter-distance cost factors for the Project receipt points are much lower when Mackie Creek Interconnection is designated as a Group 1 delivery point, and so are the FT-R tolls.

Competition

Westcoast opposed NGTL's proposed tolling methodology in part because Westcoast viewed the methodology as negatively impacting its ability to compete in Northeastern BC. Westcoast argued that the Project facilities should be separated from the existing cost pool with separate revenue requirements and tolls to allow fair pipeline competition to occur. Westcoast estimated that if the Project proceeded with the applied-for tolling methodology, it would face the loss of 400 to 900 MMcf/d of gathering, processing, and T-North service in the region, resulting in the loss of approximately $65 million to $150 million of annual revenue based on 2013 revenues. The annual financial impact associated with the loss of further volumes to an expansion or extension of the North Montney Mainline would depend on the extent and location of the facilities.

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[4] NGTL North Montney Hearing Exhibit C29-13, Progress Undertaking U-3, (A4D4V0).

Westcoast also discussed its own business development, describing a planned LNG partnership with British Gas to develop two large diameter pipelines with the capacity of 4 Bcf/day each.

Dr. Cicchetti said that the regulator's task is to ensure fair competition and then let the results work themselves out through the competitive process. If the regulated pipelines have been provided with all reasonable tools to compete and one pipeline does not succeed, Dr. Cicchetti said that pipeline should bear the costs of failing. He said that fair competition in Northeastern BC for gas transmission services would be no different.

Further, Dr. Cicchetti said that NGTL's proposed toll treatment would destroy any semblance of a level playing field for competitors transporting gas from Northeastern BC because no other pipeline could compete with the near zero or negative incremental toll that would result. He said that a competitive environment was appropriate if both incumbents and entrants have the ability to construct and operate new facilities while avoiding cross subsidization. This would provide market participants with the appropriate price signals to develop economically efficient infrastructure.

Also, Dr. Cicchetti argued that a level playing field would require shippers on the Project to pay one toll on the Project and then a separate toll for use of the existing NGTL System, just as shippers on other pipelines systems would face a stacked toll to access the NGTL System.

Proposed Tolling Alternatives

Dr. Cicchetti submitted that there should be a stand-alone toll for service on the Project. All shippers on the Project would pay the stand-alone toll. Shippers of gas who seek access to downstream markets on the existing NGTL System would pay a separate toll to NGTL for service on the existing System. Shippers that seek access to the Project from other pipelines, including NGTL, would pay the NMML stand-alone toll after paying the other pipeline's toll. Stand-alone tolling would ensure that tolls on the Project are not subsidized and are consistent with the principle of cost causation. Dr. Cicchetti further stated that stand-alone tolling would also eliminate the inherent flaw of near zero or negative incremental tolls in the NGTL toll design.

Westcoast Tolling Features

The Westcoast system has two different tolling approaches for its four zones. Westcoast's gathering and processing facilities, in Zones 1 and 2, are regulated under the Framework for Light-Handed Regulation (Framework) and Westcoast's sales gas transmission pipelines, Zones 3 and 4, are regulated on a COS basis.

In Zones 1 and 2, under the Framework, Westcoast and shippers negotiate tolls and terms and conditions of service as they would in a competitive market.

In Zones 3 and 4, tolls are determined separately on a cost of service basis and are negotiated toll settlements between Westcoast and its stakeholders. Zone 3 and 4 each have a separate rate base, depreciation, income tax, property tax and operations and maintenance costs. Zone 3's cost of service uses the postage stamp methodology, while Zone 4 uses a volume/distance methodology.

In Zones 3 and 4, the risk of under-utilization is borne by the shippers and if contracts decrease, the toll is adjusted accordingly. In addition, shippers are also responsible for cost overruns on expansions, for all prudently incurred costs.

For expansions of Zone 3 or 4, Westcoast's current policy is to roll in the cost of the expansion facilities into the respective COS, and to toll the expansion service under the respective existing tolling methodology.

3.4 Views of the Board on Appropriateness of Tolling Methodology

3.4.1 Relevant Tolling Principles

In this proceeding, participants made reference to various tolling principles and key considerations that have guided the Board's decisions in past hearings.

The Board's mandate for traffic, tolls, and tariff matters is found in Part IV of the NEB Act. The Board is governed by sections 62 and 67 of the Act which state:

- all tolls shall be just and reasonable, and shall always, under substantially similar circumstances and conditions with respect to all traffic of the same description carried over the same route, be charged equally to all persons at the same rate; and
- no toll shall result in unjust discrimination.

However, the Board has wide discretion in choosing the method to be used by it and the factors to be considered by it in assessing the justness and reasonableness of tolls.

The statutory requirement that there be no unjust discrimination in tolls is often referred to as a key tolling principle. In the RH-4-86 Decision[5], the Board stated that the Board can set different tolls for traffic of different descriptions, for traffic of similar description but which is carried over different routes, as well as for traffic which flows under substantially different circumstances, all without offending the prohibition against unjust discrimination. Whether or not any such circumstances should be examined in this case is a matter for the Board to decide based on the evidence before it.

A principle referenced in many Board decisions is that tolls should be, to the greatest extent possible, cost-based and that the users of a pipeline system should bear the financial responsibility for the costs caused by the transportation of their product through the pipeline. This is often referred to as the cost causation principle, which the Board views as a primary toll-making principle. The term "cross-subsidization" is used to denote a departure from the cost causation principle.

In past hearings, when deciding whether rolled-in or stand-alone tolls would best adhere to the principle of cost causation, the Board has also considered the following two factors: 1) the degree to which the proposed facilities would be integrated with the rest of the pipeline system; and 2) the nature of the service to be provided by the proposed facilities in relation to the service provided by the rest of the pipeline system.

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[5] NEB Reasons for Decision RH-4-86 dated June 1987, Interprovincial Pipe Line Ltd. - Chapter 8, 8.1 Introduction, pages 47 and 48, PDF pages 67 and 68 of 122, (A4F4A1).

In addition, the concept of economic efficiency has been one of the Board's strategic goals for many years. In the context of regulated tolls, economic efficiency generally means that tolls should promote proper price signals to maximize the utilization of the pipeline system and thus lower costs.

3.4.2 Disposition on Requested Relief

The Board denies NGTL's requests to include the costs required to provide service on the Project in the determination of the NGTL System revenue requirement and to calculate the tolls for services on the Project using the same methodology used to calculate tolls for services on all other facilities on the NGTL System.

Based on the evidence presented, the Board finds that NGTL's proposed tolling for the Project does not sufficiently satisfy the cost causation principle or the goal of economic efficiency. Tolls derived from NGTL's proposal would not be just and reasonable. However, the Board has provided NGTL directions regarding tolling for the Project that would result in just and reasonable tolls, and would avoid unjust discrimination.

NGTL did not propose an alternative to address the Board's possible denial of its Part IV relief. NGTL indicated a preference to have the Board approve a Certificate for the Project under section 52 of the NEB Act and provide conditions and direction regarding what the Board finds acceptable if the Board were to deny its request. The Board has considered what would be sufficient for it to find the tolls to be just and reasonable and has issued Order TG-002-2015 (Order), attached as Appendix IV to this Report. If a Certificate for the Project is issued, the Order presents NGTL with the option to construct and operate while developing a revised tolling methodology for the Long-Term Phase (as that term is defined below).

Pursuant to the Order, the Board requires NGTL to establish a separate cost pool or separate cost centre for the Project that includes all expenditures and revenue related to the Project and maintain it for the life of the Project, or until the Board directs otherwise.

For the Transition Period (as that term is defined below) only, the Board will allow NGTL to charge Project shippers tolls derived by combining the incremental revenue requirement of the Project with the revenue requirement of the existing NGTL System and applying its current tolling methodology. However, NGTL must also accumulate in a deferral account that portion of the Project's COS not recovered by incremental revenue from Project-related transportation contracts for disposition in a future tolls application.

During the Transition Period, existing NGTL shippers could subsidize the Project in at least two ways: by providing no-charge access for Project shippers to the existing NGTL System, and by covering some part of the Project cost of service. While some cross-subsidization is inherent in many toll designs, the Board finds that Project shippers would be receiving a significant subsidy during the Transition Period, if the existing tolling methodology were applied as proposed by NGTL. The Board is limiting the amount of cross-subsidization by the accumulation of unrecovered North Montney COS in a deferral account. The finite nature of the Transition Period limits the length of time that any remaining cross-subsidization will occur.

For the Long-Term Phase, NGTL may develop and seek Board approval for a new tolling methodology applicable to the Project facilities, which will better satisfy the principal of cost causation and the goal of economic efficiency. If NGTL does not develop a replacement

methodology that is approved by the Board by the end of the Transition Period, the Board requires NGTL to implement stand-alone tolling for the Project until an approved long-term methodology is in place.

The separation of cost pools allows accountability for the costs related to the Project to clearly rest with NGTL and the Project's shippers. As set out in the Order, the Transition Period ends in 2019 or earlier if PRGT is available to take deliveries before that. Clause 4 of the Order sets out the Board's toll direction for the Long-Term Phase. The Board believes that there will be sufficient time for NGTL to develop an acceptable tolling methodology for the Long-Term Phase. Further, the default of stand-alone tolls at that point clearly identifies the impact to NGTL and the Project's shippers of failing to demonstrate and obtain approval for a tolling methodology that satisfies the Board's principles and goals.

Reasons for Disposition

The Board finds that gas flow patterns for the Project are expected to change significantly when North Montney gas production is first delivered at the Mackie Creek Interconnection for transportation on the PRGT pipeline in 2019. Accordingly, the Board has examined the Part IV questions for two distinct periods:

- the Transition Period, which starts when gas begins to flow on the Project and expires when North Montney gas production is first delivered at the Mackie Creek Interconnection; and
- the Long-Term Phase, which starts at the end of the Transition Period.

The Board's use of these two time periods to assess the Application reflects consideration of the Project's changing circumstances. The Board's determination for the Transition Period is specific to that period and not applicable for the life of the Project. If the Board were to approve a revised tolling methodology for the Long-Term Phase, and if the Project circumstances subsequently change, NGTL may file a revised tolling methodology with the Board for approval.

The appropriateness of NGTL's tolling methodology for proposed pipeline extensions in northeastern BC has been an issue in two previous proceedings: NGTL's Rate Design Methodology and Integration Application (RHW-1-2010) and Northwest Mainline Komie North Extension (GH-001-2012). Although the facts and circumstances in each application are unique, the Board continues to find the cost causation principle and the goal of economic efficiency key to assessing the appropriateness of NGTL's proposed tolling methodology for extensions to its system. In the Board's view, just and reasonable tolls result from the consistent application of this principle and this goal over the long-term.

As noted above, the Application asks the Board to address two questions associated with NGTL's request for relief under Part IV of the NEB Act:

- Should the costs for the Project be added to the cost pool for the existing NGTL System to determine the NGTL System revenue requirement?
- Should the same tolling methodology used on the existing NGTL System be used on the applied-for Project facilities?

In the Board's view, these questions are interrelated. As noted above, when the Board considers the principle of cost causation as it pertains to proposed tolling for a project, the Board examines

the level of cross-subsidization, the level of integration, and the nature of the services offered. As the level of integration and nature of services may have cost implications, it is not appropriate to separately consider integration and services apart from the cost causation principle.

Integration

The Board finds that the Project, as presented, is not meaningfully integrated with the existing NGTL System during the Long-Term Phase. Physical and operational integration exists in the Transition Period; however, based on the evidence presented this degree of operational integration is temporary.

Evaluating the level of integration during both the Transition Period and the Long-Term Phase involves assessing the extent to which the Project and the existing NGTL System are physically and operationally integrated. The purpose of that evaluation is to determine whether the cost of Project facilities may be combined with the costs of the existing NGTL System when calculating tolls.

Although the Project is at all times physically connected with the existing NGTL System, a mere physical connection is not sufficient to find that meaningful integration exists. In this case, Project facilities are geographically separated from the footprint of the existing NGTL System. As a result, none of the Project's facilities parallel or share the route of the existing System. Further, the Project's pipeline will be connected to a single point at an extremity of the existing NGTL System, which precludes the Project from affecting the capacity of the existing System, as further discussed below.

The Board finds that in the Long-Term Phase, the Project can be used separately and largely independently of the existing NGTL System and the gas flows between the two sets of facilities will be minimal and intermittent. NGTL's flow schematics show that the flow between the Project and the existing NGTL System declines dramatically when the Project enters the Long-Term Phase. The Mackie Creek to Saturn portion is used well below capacity and the direction of the flow may change.

However, during the Transition Period, the Project will not be used separately and independently of the NGTL System. Gas will flow from the Project's receipt points to the existing NGTL System and will be physically commingled with gas from other receipt points and delivered to existing NGTL System. When physical integration is coupled with the overall operational integration, the Project is meaningfully integrated with the existing NGTL System during the Transition Period.

Both Progress and NGTL made frequent reference to the value of the NIT market and the role that access to the NIT market plays in Progress' plans. The Board recognizes that the NIT market will benefit Progress both in the Transition Period and the Long-Term Phase. However the Board finds the seamless access to the NIT market is not a determining factor in whether the Project is integrated. Evidence that it is convenient or preferable for a shipper to access the NIT market without paying stacked tolls is not a persuasive factor in determining integration.

Some parties referred to GH-2-87[6], where the Board addressed the integration of facilities and services in reaching a conclusion that rolled-in tolls were appropriate for a proposed expansion to

[6] NEB Reasons for Decision GH-2-87 dated July 1988, TransCanada - Applications for Facilities and Approval of Toll Methodology and Related Tariff Matters, (A4F3Y5).

the TransCanada Mainline system, adding service to Ontario and to export points to the Northeast U.S. The combined volumes were treated as driving the need for the facilities and, in that case, either new or existing facilities could be used to transport gas over the same route. The result was that investments were included in one rate base of undifferentiated risk and the annual costs of providing service were combined in one cost pool for toll derivation. The allocation of total revenue requirement to tolls was, and continues to be, distance-based. The facts and circumstances associated with the Project are very different from GH-2-87.

In GH-2-87, some of the facilities on the TransCanada Mainline were loops (i.e., proposed pipe parallel to existing pipe). The term integrated was sometimes used where either proposed or existing facilities could provide service (to existing and incremental supplies) from the Alberta border to Ontario. In the Board's view, in neither the Transition Period nor the Long -Term Phase in this Project are the facilities integrated in that sense.

In assessing integration, the Board also examined whether the aggregate demand of all shippers on the NGTL System caused the need for the Project or whether it was primarily Progress. In the Application, NGTL stated that the proposed facilities are underpinned by FT-R and FT-D contracts with Progress. NGTL has confirmed that if Progress were to defer or cancel the LNG exports and associated facilities to which FT-D contracts at the Mackie Creek Interconnection are tied, NGTL would not seek to construct the Project using any approvals that may result from the Hearing. Based on the evidence, the Board finds that it is Progress' need for gas transportation services from North Montney, and not the aggregate demand including the demand of customers on the existing NGTL System, that triggered the need for the proposed facilities. A determination on integration can also be influenced by the benefits of a Project to existing users of a system. For this Project, the Board considered the extent that the incremental supply and market access would benefit the users of the existing NGTL System. The Board noted that, while North Montney gas production may increase *throughput* on the existing NGTL System during the Transition Period, the Project would not increase the *capacity* on the existing NGTL System in either the Transition Period or the Long-Term Phase. In reaching these views, the Board noted that no Intervenors, including the Industrial Gas Consumers Association of Alberta, provided evidence that they would require the Project to deliver gas to the existing NGTL System. ATCO, a FT-D3 customer on the existing NGTL System, said that its customers may receive occasional benefit a few days a year from the North Montney gas supply. However, ATCO expressed concern that such benefits would be minimal and uncertain, and outweighed by the long term risk of having to pay costs that are not recovered from Project shippers.

Services Provided by NGTL

The Board finds that the Project services provided to Progress by NGTL are separate and distinct from services offered to existing NGTL shippers for the Long-Term Phase; however, the services are similar during the Transition Period.

During the Transition Period, gas will be received from Project receipt points and will be physically commingled with gas on the existing NGTL System. No evidence was provided to demonstrate that the Project would add incremental delivery contracts during the Transition Period. At the beginning of the Long-Term Phase, however, most of the gas received on the NMML will be physically directed to the Mackie Creek Interconnection for delivery off the NGTL System to the PNW LNG Facility.

Progress has delivery contracts at the Mackie Creek Interconnection scheduled to commence in 2019, as further detailed in Chapter 4. Progress indicated that it expects the primary service would be delivery of Progress' proprietary North Montney gas production physically to the Mackie Creek Interconnection for ultimate delivery to the PNW LNG Facility. This arrangement would meet Progress' requirement that its high heat content gas flow to the PNW LNG Facility. Westcoast, EUG and FortisBC all submitted, and the Board agrees, that this arrangement has characteristics of points-to-point service, rather than receipt points to market hub service as is provided on the existing NGTL System.

In addition, under the same contracts, Progress will have access to intermittent gas transportation to or from the Project through the connection with the existing NGTL System to level out fluctuations in PNW LNG Facility operations, in gas supply and in market demand for LNG.

The ability to use the existing NGTL System is beneficial to Progress. The Board finds the combination of the points-to-point gas flow, physical delivery of Progress' proprietary gas production to the Mackie Creek Interconnection and intermittent bi-directional gas transportation to and from the existing NGTL System results in an enhanced service. In this Project, NGTL proposes to support this enhanced service with large diameter facilities with over 100 kilometres of pipe costing in excess of $600 million, for which the evidence does not show high utilization in the Long-Term Phase. The Board has not seen evidence that these service features are offered elsewhere on the existing NGTL System and supported by additional facilities with expected low utilization, as shown in NGTL's flow schematics. For this reason, the Board finds that a separate and distinct service is offered to Progress on this Project in the Long-Term Phase, although the Board acknowledges that the service to Shippers A, B and C does not have these enhancements.

Cross-Subsidization

The Board finds that applying the NGTL tolling methodology as proposed to this Project would result in excessive levels of cross-subsidization of the Project by existing NGTL shippers. The proposed tolls derived from NGTL's single cost pool, rolled-in tolling methodology do not have a direct link with the cost of the proposed facilities and the tolls are not adequately aligned with the cost causation principle for the Project facilities.

NGTL argued that the evidence showed that there will not be any cross-subsidization by existing NGTL shippers through the application of the same tolling methodology to the Project facilities. NGTL relied largely on its NPV Revenue and NPV COS comparison, which showed that the Project's revenues reasonably reflect the costs over the Project's life and would lower overall NGTL System tolls through at least the term of the initial contracts. NGTL argued that the Project revenues are conservative and may be greater than included in the Application. This would reduce tolls for shippers on the existing system as long as the Project's actual capital costs show little variance from the estimates.

The Board finds that NGTL's NPV Revenue and NPV COS comparison does not take into consideration several factors that may affect the cross-subsidization of the Project by existing shippers on the NGTL System. These factors include the following.

First, the capital cost estimate underpinning the Project COS is a Class 4 or 5 estimate[7]. The Class 4 estimate has a potential variance of minus 25 to plus 30 per cent. Should actual capital spending exceed the Project estimate in this Application most of the unfavourable effects would be borne by the shippers on the existing NGTL System. Similarly most of the benefits of actual capital spending being less than the Project estimate would accrue to the same shippers.

Further, Progress has the contractual right to transfer 25 per cent of its FT-R capacity away from the Project to receipt points on the existing NGTL System. This right has the potential to reduce the FT-R revenue that the Project would generate below that included in the Application.

In addition, it is unclear whether all of the estimated FT-R revenue included in the Transition Phase is entirely incremental, or whether some of it will replace other receipt revenue from shippers on the existing NGTL System. If some of this revenue is replacement, it follows that the NPV Revenue and Project benefits would be overstated. Further, in its NPV analysis, NGTL streamed all of the estimated revenue to the benefit of the Project. This results in the Project making no contribution to the existing system for any Project volumes accessing this system.

NGTL's analysis also did not account for the remaining undepreciated cost of the Project's assets becoming the sole responsibility of the shippers remaining on the NGTL System after the Project's transportation contracts expire.

These factors indicate that the extent of subsidization of the Project by the shippers on the existing NGTL System may be higher than estimated by NGTL, notwithstanding the potential for additional transportation contracts. The Board finds that NGTL's NPV Revenue and NPV COS comparison does not clearly demonstrate an absence of cross-subsidization, as submitted by NGTL. In these circumstances, the Board does not find it appropriate to combine the Project costs with the cost pool of the existing NGTL System. A separate cost pool for the Project would allow the benefits and burdens to align more closely with the proponents creating the need for the Project.

The Board also finds the illustrative receipt tolls provided by NGTL depart significantly from the cost causation principle. During the Transition Period, tolls to enter the existing NGTL System at or near Saturn would be close to the FT-R ceiling. The illustrative tolls provided by NGTL show that in 2018 shippers at Saturn would pay FT-R tolls of 26.6 cents per Mcf based on an average path distance of 1,084 km. In comparison, shippers at Kahta Creek would pay FT-R tolls of 29.9 cents per Mcf based on an average path distance of 1,385 km. The FT-R ceiling constrains the revenue. Tolls at the Kahta end of the Project, approximately 300 km from Saturn, are only 3 cents per Mcf higher than the tolls at Saturn. Despite the large Project volumes, incremental receipt contract revenue does not exceed the incremental COS in the Transition Period. For the Transition Period, the Board finds that these tolls generate insufficient revenue from the Project related FT-R contracts to make a meaningful contribution to costs, whether the revenue is allocated to the revenue requirement of the existing NGTL System or the incremental COS of the Project. The Board finds that NGTL's proposed tolling for the Project would result in excessive cross-subsidization during the Transition Period.

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[7] NGTL's expected accuracy range for its estimate of capital costs for the Project appears to be based on the cost estimate classification system of AACE (Association for the Advancement of Cost Engineering) International or a similar system for the classification of capital cost estimates.

During the Transition Period, the Project would add $392 million to NGTL's COS. The Project shippers are expected to contribute $223 million from FT-R contracts. Even setting aside the question of any contribution for service on the existing NGTL System, the Board finds that this $169 million revenue shortfall would result in excessive cross-subsidization by shippers on the existing NGTL System during the Transition Period.

NGTL submits that shippers on the existing NGTL System benefit during the Long-Term Phase from some reduction in tolls. However, given the two distinct time periods with different flow patterns, the Board does not find that this prediction is sufficient to offset the Board's concern regarding cross-subsidization in the Transition Period.

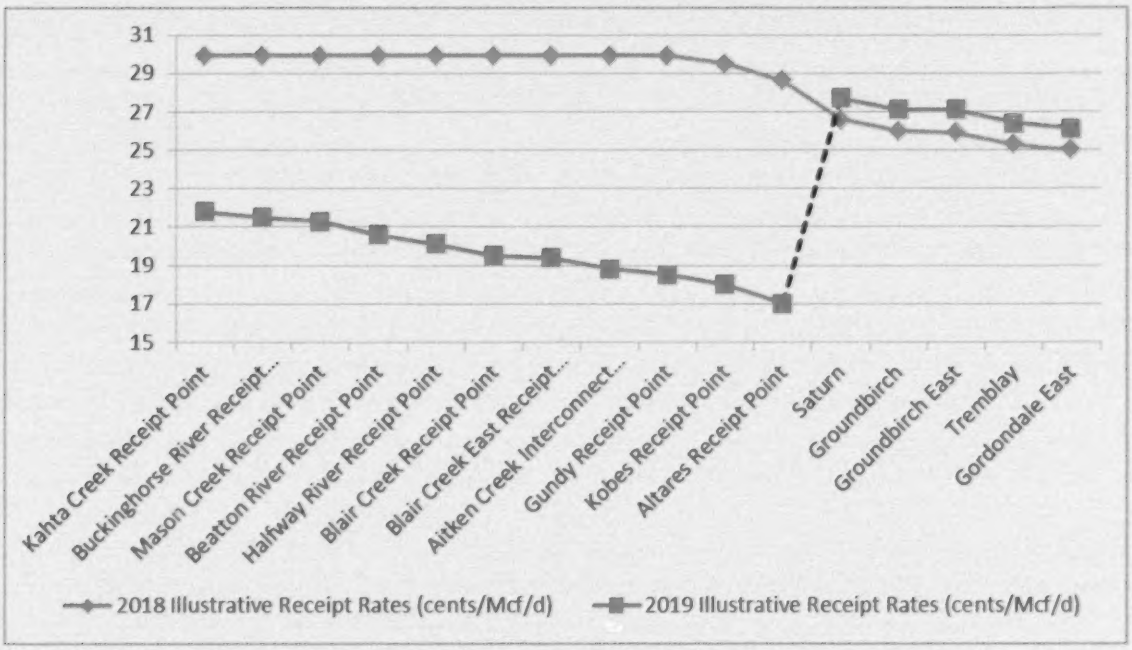
In these circumstances, the Board does not find the rolled-in tolls to be just and reasonable for the Project. However, the Board's direction requiring the collection and accumulation of unrecovered Project COS in a deferral account during the Transition Period limits the amount of the cross-subsidization. Further, the Transition Period is finite, ending when deliveries to PRGT start at the Mackie Creek Interconnection, and in any event no later than 48 months from the commencement of gas flows on the Project. This further limits the length of time that any excessive cross-subsidization would occur. NGTL may use rolled-in tolls calculated by temporarily combining the revenue requirement for the Project with the revenue requirement for the existing NGTL System and applying its existing tolling methodology. The Board finds that these rolled-in tolls will be just and reasonable for the Transition Period when supported by the use of the deferral account.

The proposed tolling methodology for the Project also generates receipt tolls with problematic patterns for the Long-Term Phase. Using selected data from the Application, Figure 3-1 presents the FT-R toll at various locations for 2018 and 2019 and Figure 3-2 presents the average path distances for various locations for 2018 and 2019. The estimated tolls for the receipt points on the Project during the Long-Term Phase exhibit irregular patterns when two Group 1 delivery points, Empress and Mackie Creek Interconnection, which are widely separated geographically, are part of the toll calculation.

The Board recognizes that NGTL estimated the receipt tolls for the Project without using the complete pricing algorithm. The Board finds that the illustrative tolls indicate that applying NGTL's current tolling methodology to this Project does not satisfy the cost causation principle in these circumstances. For example, Figure 3-1 shows that the tolls for the Project's Kahta Creek North Receipt Meter Station would be about 22 cents per Mcf in 2019 while the toll at the existing Saturn Receipt Meter Station on the existing NGTL System would be more than 27 cents. In contrast, Figure 3-2 shows that the average path distance for receipts from Kahta Creek North Receipt Meter Station would be about 300 km less than the path distance for the Saturn Receipt Meter Station. This results in the receipt tolls for Shippers A, B and C being very low relative to the tolls for receipt shippers on the existing NGTL System near Saturn.

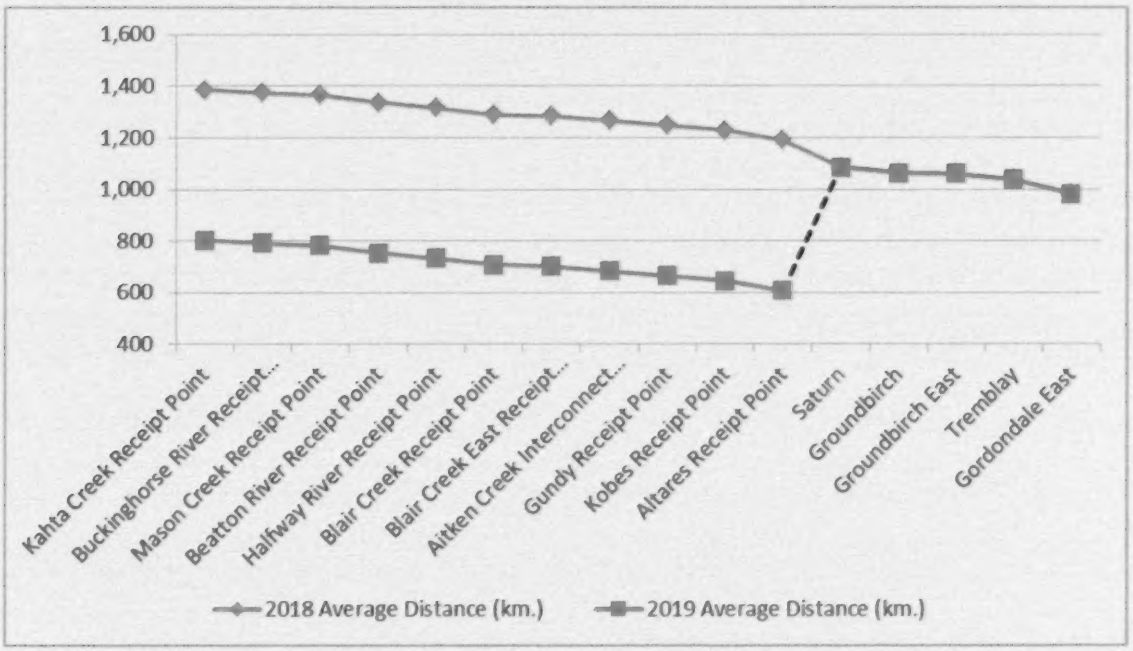
As noted above, the Board has concerns with the level of integration of the Project and the unique services that Progress would receive. The erratic illustrated toll patterns discussed above are also problematic in regard to cost causation because they show that NGTL's current tolling methodology cannot accommodate all Project receipt and delivery point combinations appropriately. Based on the projections provided by NGTL, the Board finds that applying this tolling methodology would not produce just and reasonable tolls for Shippers A, B and C during the Long-Term Phase.

Figure 3-1: FT-R Rates in 2018 and 2019



Sources: NGTL response to Westcoast IR 1.06, Table Westcoast 1.6-1, Illustrative Receipt Rates, (A3Y0H0); NGTL response to Westcoast IR 1.07, Table Westcoast 1.7-1, Illustrative Receipt Rates, (A3Y0H0).

Figure 3-2: Average Path Distances in 2018 and 2019



Sources: NGTL response to Westcoast IR 1.06, Table Westcoast 1.6-2, Illustrative Average Path Distances, (A3Y0H0); NGTL response to Westcoast IR 1.07, Table Westcoast 1.7-1, Illustrative Average Path Distances, (A3Y0H0).

Risk

The Board finds that the proposed tolling methodology imposes inappropriate risk on customers on the existing NGTL System because of uncertainty about long-term utilization. For this Project, the Board considers risk to be closely related to cost accountability and cost causation, as well as to the allocation of long term uncertainties between shippers on the existing NGTL System and the proponents whose decisions define the Project scope and costs.

Progress acknowledged that the international LNG market has risk and it could change over time. Further, only 75 per cent of Progress's FT-R contracts are attached to these facilities, and even then, only for 10 years for each contract. The other 25 per cent of these contracts are secondary term with the ability to move elsewhere on the NGTL System. The long-term utilization is somewhat uncertain for the Kahta to Mackie Creek facilities and for Mackie Creek to Saturn after 2019. NGTL did not provide evidence comparing the fundamental risk for the Project with that of the existing NGTL System. This further supports the Board's decision to require separate cost pools at this time, as combining Project costs into one cost pool may place the long-term risk associated with the Project on other shippers on the NGTL System.

Unjust Discrimination

The Board finds that based on NGTL's projections, during the Long-Term Phase, unjust discrimination would occur under NGTL's proposed tolling for the Project.

Section 62 of the NEB Act requires tolls to be charged equally to all persons at the same rate, under substantially similar circumstances and conditions, with respect to all traffic of the came description carried *over the same route*. The Board finds that during the Long-Term Phase, most of the Project gas volumes will travel over a different route than gas transported on the existing NGTL System.

A comparison of the estimated receipt tolls on the Project during the Long-Term Phase with the receipt tolls on the existing NGTL System raises concerns of discrimination because receipt points with a longer distance of haul would have lower tolls even though other transportation circumstances were similar. Shippers A, B and C on the Project facilities would pay favourable tolls for access to NGTL System relative to shippers east of Saturn where gas travels a shorter distance. In addition, the distance of haul for the gas of Shippers A, B and C would be considerably greater than Progress' weighted average distance of haul; however, these shippers would be charged the same FT-R rate. The existing tolling methodology appears unable to adapt to the unique circumstances of this Project without discrimination.

After the Transition Period, if Progress ships gas volumes onto the existing NGTL System, Progress would be accessing the existing System at a toll less than the toll applicable downstream. The volume weighted averaging may take account of this (with a two year lag) for Progress, but not for Shippers A, B and C, whose gas is shipped farther. The existing tolling methodology creates these irregular patterns, even in the long term when applied to this Project.

Economic Efficiency

The Board finds that applying the existing NGTL tolling methodology to the Project is inconsistent with the goal of economic efficiency. The contractual arrangements between NGTL and Progress would enable Progress to deliver gas at Mackie Creek Interconnection or onto the existing NGTL System. The result is a Project design that includes facilities that are only

expected to be highly utilized prior to 2019 (i.e., the Mackie Creek to Saturn portion). The Board finds insufficient evidence that the facilities in this segment will be highly utilized after 2019. This economically inefficient outcome is encouraged by the transportation contracts and NGTL's tolling methodology. This finding provides additional rationale for the Board's decision to reject NGTL's proposal to use the existing tolling methodology for this Project in the Long-Term Phase.

Competition and Commercial Impacts

In the case of competition amongst regulated pipelines, the Board finds that adherence to the principle of cost causation lays the foundation for fair competition. Given the competitive environment in Northeastern BC, the vast potential of the resource and potential to benefit Canadians, the Board is mindful of the need to prevent competitors from gaining a regulatory advantage as a result of its tolling decisions.

The Board finds that, based on evidence of business development described by Westcoast, Alliance and NGTL, regulated pipelines are currently competing successfully in Northeastern BC. Westcoast, Alliance and NGTL all currently compete with different tolling methodologies as approved by the Board.

Westcoast advocated for stand-alone tolling on the Project. This appears to the Board to be a more rigorous tolling methodology than Westcoast has in place in Zone 3 and Zone 4.

It is up to each pipeline operator in northeastern BC to develop its own business model. In a competitive environment, the Board expects to see innovative services and products from competitors that comply with the Board's tolling principles. Pipeline tolls may be one tool that companies use to compete. However, tolls must be just and reasonable, and the Board will consider circumstances and context when approving tolls.

Intervenors noted the potential commercial impacts of the Project proceeding with the applied-for tolling methodology. FortisBC and EUG expressed concerns that if NGTL's proposed tolling methodology was applied to the Project, there would be decreased liquidity at Westcoast's Station 2 and potentially increased costs to access gas supplies. The Board is of the view that its direction regarding tolling of the Project mitigates Intervenor concerns about the potential commercial impacts of the Project.

The Unique Facts and Circumstances of the Application

Parties drew many comparisons between the Project and the Board's Gros Cacouna (RH-1-2007) decision. In the Gros Cacouna decision, the Board found that the Gros Cacouna pipeline was integrated and, when tolled on a rolled-in basis, would have appropriate distance sensitivity. On those two bases, the Board found the rolled-in methodology was appropriate. This finding depended on not only integration, but also the distance-sensitivity of the tolls, two factors that the Board finds are problematic in respect of the Application.[8] For this Project, in the Transition Period, the Project is meaningfully integrated and Project shippers receive the same services as existing NGTL shippers; however, the proposed tolling methodology does not adequately address cost causation.

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[8] NEB Reasons for Decision RH-1-2007 dated July 2007, TransCanada - Gros Cacouna Receipt Point page 42, PDF 54 of 59 (A0Z7D1).

Further, a purpose of the proposed Gros Cacouna pipeline was to provide a new supply source to the existing market served by the TransCanada Mainline. During the Transition Period, additional gas supply will be delivered from North Montney to the existing NGTL System. However, when the Project enters the Long-Term Phase, deliveries to the existing NGTL System will be reduced and most of the North Montney production will be physically streamed to the west coast of BC to feed international LNG markets. Some of Progress' gas supply may be delivered occasionally to the existing NGTL System or received from the existing NGTL System, but not on a consistent, year-round basis.

The Board also recognizes that there is competition among regulated pipelines for the transport of North Montney gas. In contrast, competition in the Gros Cacouna area was between two unregulated LNG project proponents.

Comments Regarding Tolling for the Long-Term Phase

The Board recognizes that the interaction between the existing NGTL System and the proposed Project may evolve over time. In changed circumstances, NGTL can apply to the Board to revise its tolling methodology.

Although the Board does not wish to fetter NGTL in its efforts to develop a revised tolling methodology for the Long-Term Phase, it will offer a few guiding comments. As noted, the tolling methodology must reflect greater adherence to the cost causation principle in the tolls for the Long-Term Phase, and result in incremental revenue covering a meaningful portion of the incremental COS of the new facilities and contributing to the existing NGTL System. Both shippers causing the cost of the extension and NGTL should have increased cost accountability. Further, the tolling for the Long-Term Phase should address the accumulated costs remaining in NGTL's deferral account.

In RHW-1-2010[9], the Board indicated that it had reservations regarding NGTL's tolling methodology when applied to pipeline extensions. The Board considered two closely linked issues: the geographic footprint of the Alberta System implicit in the toll settlement and the appropriate rate ceiling for FT-R service. The evidence in this proceeding, as well as in GH-001-2012, shows that the existing tolling methodology does not adhere to the cost causation principle for some major westward extensions.

With this Project, NGTL is proposing to add costs to the cost pool for a geographically wide-spread existing NGTL System, making it difficult to show cost causation and to trace cost accountability for this Project. However, there may be facilities on the western side of the NGTL System that could form a cost pool with which the Project facilities could credibly be combined. This decision is not a rejection of rolled-in tolling generally. NGTL may be able to demonstrate to the Board that the Project facilities could be combined or rolled-in with some other facilities, and still demonstrate cost accountability and cost causation.

To the extent that the methodology for the Project in the Long-Term Phase is co-mingled with the existing NGTL methodology, NGTL should assess its methodology's distance sensitivity and the continued appropriateness of the FT-R ceiling. The Board observes that the Project is connected to the extremities of the existing NGTL System (as were the proposed Komie North

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[9] NEB Reasons for Decision RHW-1-2010 dated August 2010 – NGTL Toll Methodology and Integration Application, (A1T9X8).

facilities) where tolls are at or close to the FT-R ceiling. For the long-term, NGTL will have the ability to apply to change this methodology, not only for the Project facilities, but for extensions on a generic basis that may include parts of the existing NGTL System. RHW-1-2010 requires a filing due in July 2015 that may assist the Board in evaluating the FT-R ceiling.

NGTL may also develop new service offerings, such as managing fluctuations in gas production facility operations and markets (backstopping), and accessing the NIT market and the existing NGTL System, which would facilitate gas movements between facilities in the two cost pools. Pricing of such services should clearly recognize the cost of any new facilities required by the service.

These suggestions are offered as open communication based on the evidence provided during the Hearing. None of the above implies a Board pre-disposition on any filings on tolling methodology to be made in the future.

Chapter 4

Economic Feasibility and Need for the Project

In making a recommendation on an application under section 52 of the NEB Act, the Board makes a determination regarding the economic feasibility of the project, after assessing the need for the proposed facility and the likelihood of it being used at a reasonable level over its economic life. To make this determination, the Board considers the supply of natural gas that will be available to be shipped on the pipeline, any transportation contracts underpinning a pipeline, and the availability of adequate markets to receive natural gas delivered by a pipeline. The Board also considers other commercial impacts of the proposed facilities and the Applicant's ability to finance the construction and ongoing operation and maintenance of the proposed pipeline.

Matters relating to toll principles and methodology are discussed in Chapter 3.

4.1 Need for Facilities

4.1.1 Natural Gas Supply

Views of NGTL

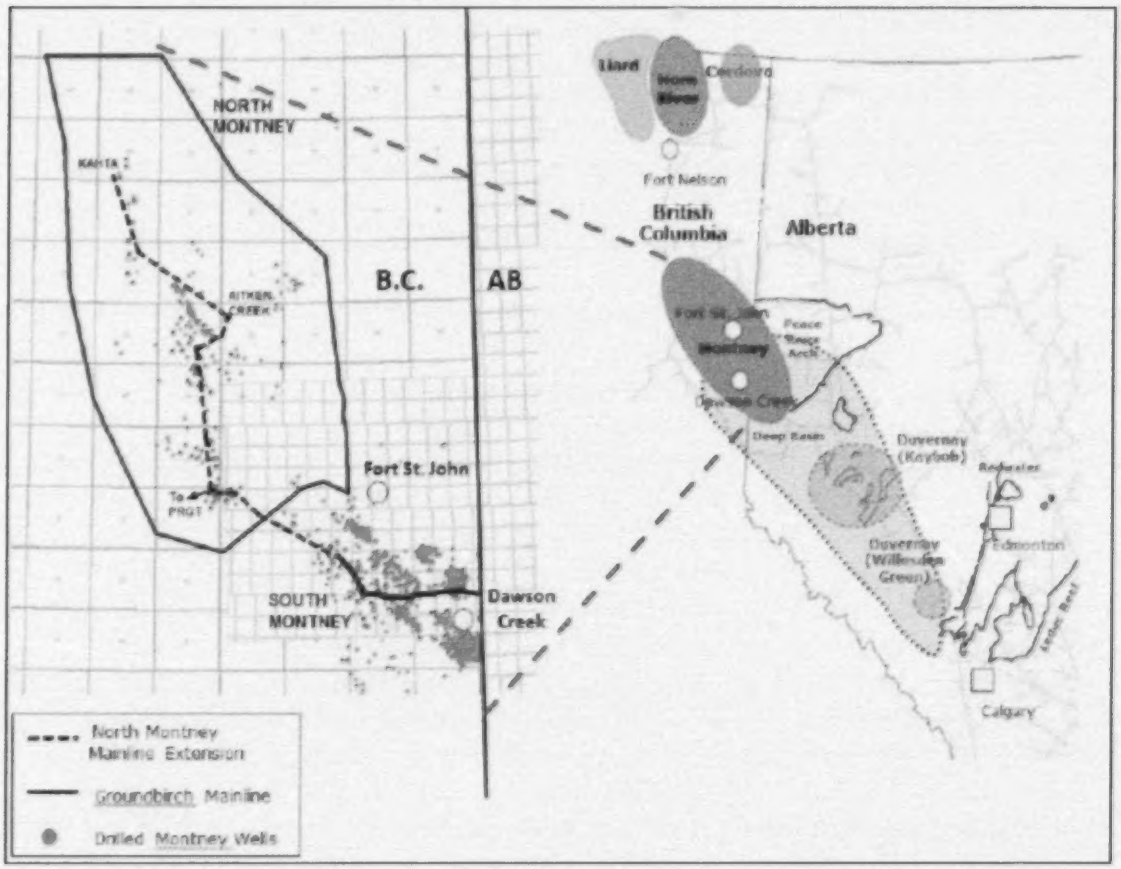
North Montney encompasses an area of approximately 20,720 km^2 (8,000 mi^2) with a gas in place (GIP) of approximately 17.4 $10^{12}m^3$ (613 Tcf). NGTL estimates the marketable volumes attributable to this Project to be approximately 2.4 $10^{12}m^3$ (85 Tcf).

Table 4-1: NGTL's North Montney Resource Estimate

	Gas in Place		Marketable Gas	
	10^9m^3	Tcf	10^9m^3	Tcf
Discovered (to 2012)	244	8.6	34	1.2
Future Potential	17,120	604	2,387	84

Source: NGTL North Montney Project Application, Section 4 Supply and Markets, Table 4-1: Estimated Natural Gas Potential in the North Montney Area, (A3Q6S8).

Figure 4-1: NGTL's North Montney Drainage Area



Source: NGTL North Montney Project Application, Section 4 Supply and Markets, Figure 4-1: North Montney Drainage Area, (A3Q6S8).

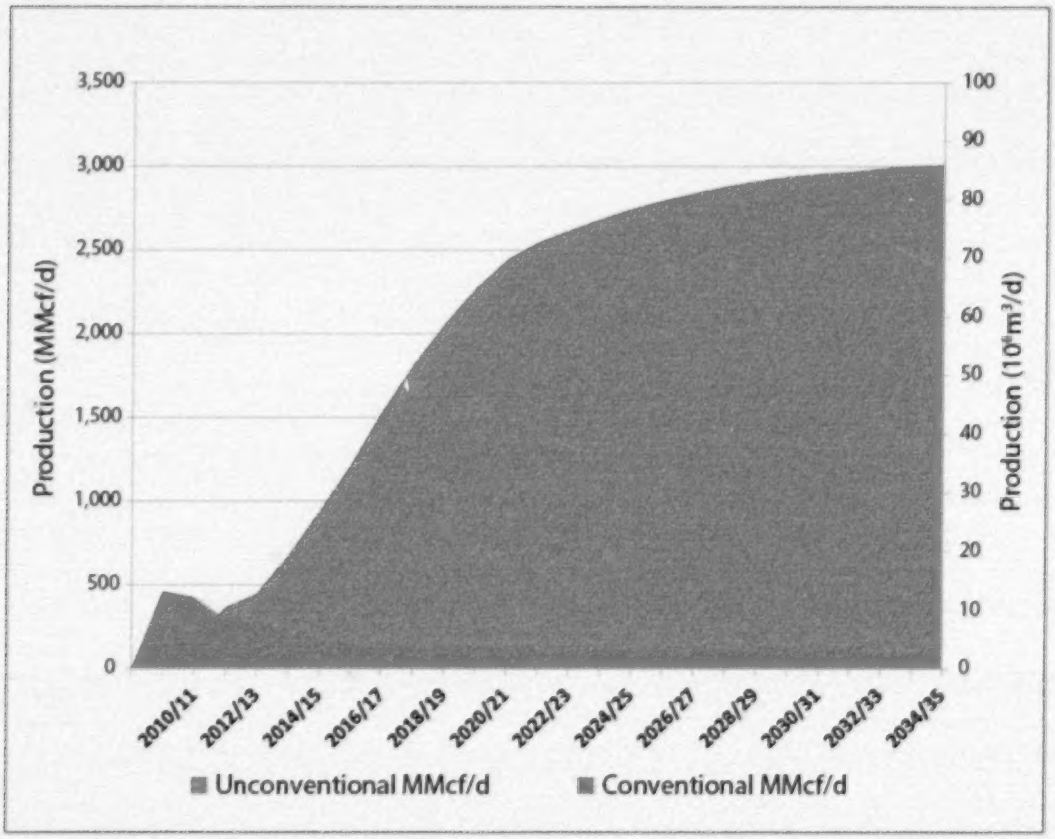
Recent industry activity has been targeting the unconventional tight and shale gas resources. This activity is accelerating as the industry prepares for LNG exports from the west coast of BC, which has given rise to the need for additional pipeline capacity to serve the North Montney area and to enable greater connectivity to the NIT market and other North American markets.

Currently, North Montney produces approximately 20.3 $10^6m^3/d$ (715 MMcf/d):

- approximately 7.6 $10^6m^3/d$ (270 MMcf/d) from conventional supply, which is expected to decline to 3.4 $10^6m^3/d$ (120 MMcf/d) by 2020; and
- 12.7 $10^6m^3/d$ (450 MMcf/d) from unconventional supply, which is expected to increase steadily to 65.2 $10^6m^3/d$ (2.3 Bcf/d) by 2020.

In the longer term, total North Montney production is expected to reach 87.3 $10^6m^3/d$ (3.1 Bcf/d). By 2035, North Montney will have produced 3 per cent of the GIP and 23 per cent of the marketable gas resource. Based on the Board's most recent resource assessment, only 12 per cent of the marketable gas resource will have been produced by 2035.

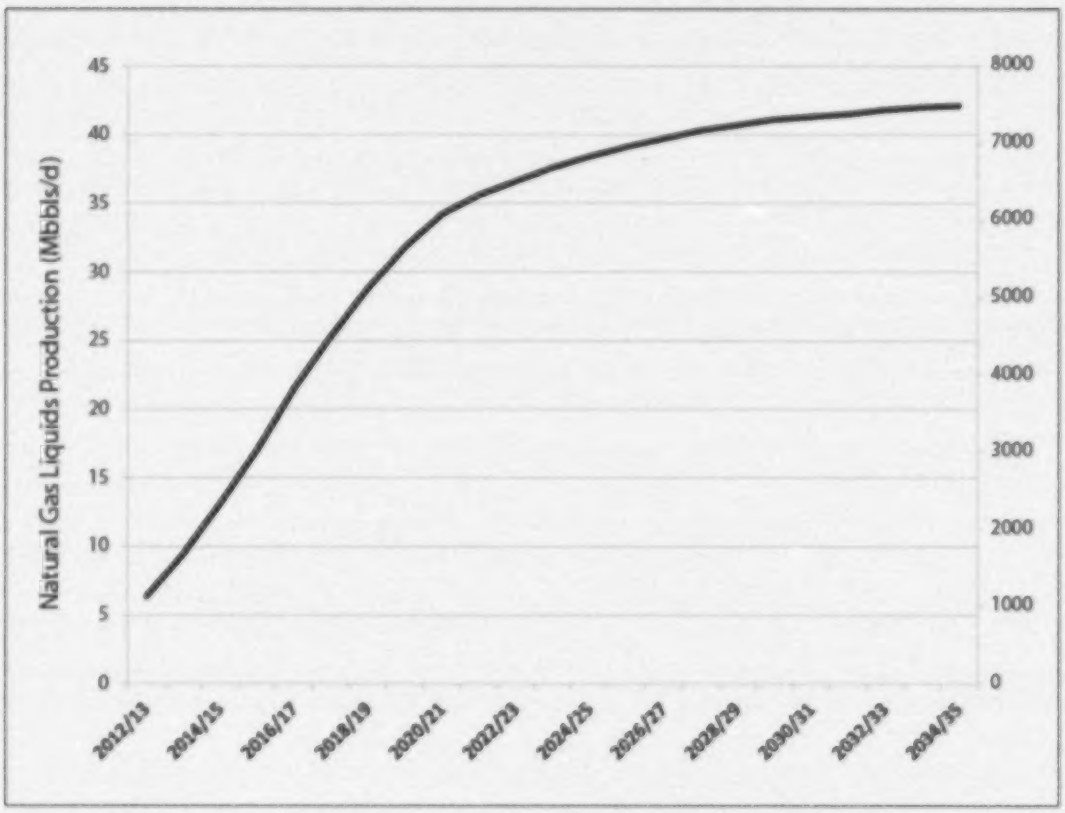
Figure 4-2: NGTL's Production Forecast for the North Montney Area



Source: NGTL North Montney Project Application, Section 4 Supply and Markets, Table 4-3: Total Production in North Montney Area, (A3Q6S8).

NGTL indicated that the North Montney production benefited from natural gas liquids (NGL) component averaging 10 to 15 bbls per MMcf, noting also that it could be significantly higher in specific areas. The high NGL content contributes to continued high levels of drilling in the play due to its positive effect on producer economics. To support this assertion NGTL provided an estimate of NGL production that increases from 994 m^3/d (6.3 Mbbl/d) in 2012/13 at the start of the forecast to 6,686 m^3/d (42.1 Mbbl/d) at the end in 2034/35.

Figure 4-3: Production Forecast for Natural Gas Liquids Expected from the North Montney Area



Source: NGTL response to NEB IR 2.1, Table 2.1-1, (A3V4S2).

Views of Participants

No participants opposed NGTL's evidence concerning the adequacy of supply to support the Project.

4.1.2 Markets

Views of NGTL

NGTL submitted that the Project will be an extension and expansion of the NGTL System needed to link supply in the North Montney area to demand centres in North America and overseas. North Montney supply would reach Asia-Pacific LNG markets through proposed pipelines to the west coast of BC connecting to proposed LNG export terminals.

There is strong industry interest in LNG export proposals as illustrated by numerous LNG export terminals that have been proposed on the BC west coast. NGTL stated it does not expect that all of them will proceed, but forecasted that by 2030, LNG exports from the Canadian west coast would reach 122 $10^6m^3/d$ (4.3 Bcf/d) and the exports from the United States would reach 134 $10^6m^3/d$ (4.7 Bcf/d).

The Project would connect to the proposed PRGT pipeline, which would supply natural gas to the PNW LNG Facility proposed by PETRONAS. The PNW LNG Facility obtained an NEB export licence for the export of up to 19.68 million metric tonnes per annum of LNG, which is equivalent to approximately 76.5 $10^6m^3/d$ (2.7 Bcf/d) of natural gas. PETRONAS is one of the largest LNG suppliers to the Japan-Korea-Taiwan market region. NGTL stated that LNG demand in Japan should increase due to the increased reliance on gas-fired generation following the Fukushima nuclear plant incident in 2011. LNG deliveries to China, which receives roughly half of its gas imports in the form of LNG, are also expected to rise, though they face more competition from pipeline transportation. NGTL's forecast also includes another LNG pipeline connecting to the NGTL System downstream of the Project.

In response to a Board ruling on a motion by Alliance, NGTL confirmed that it will not seek to construct the Project with any approvals that may result from this proceeding if the LNG exports and associated facilities forecast in the Application either develop at a significantly slower pace than forecast in the Application, or do not develop at all. NGTL further submitted that it will not commence construction of the Project unless Progress has made a positive FID on the proposed PNW LNG Project. In the case of a negative FID, but if Progress chose not to terminate its PEA and increased the term of its FT-R contracts to 20 years, NGTL indicated that it will not commence construction of the Project unless it obtains an amendment to the Certificate for the Project, demonstrating the economic feasibility of the Pipeline under this new scenario.

Any gas received on the Project would be available for purchase and sale in the NIT market. Once received onto the NGTL System, the gas could reach delivery points in Alberta and British Columbia, or be transported to other North American markets via interconnecting pipelines. NGTL submitted that the North American gas market is large, well-developed, and capable of absorbing the additional gas volumes associated with the Project. The NIT market is highly liquid and provides a significant market for the supply from the North Montney area. In 2012, approximately 286 $10^6m^3/d$ (10.1 Bcf/d) of gas was physically received on the NGTL System and the commercial gas trading often exceeded 1.7 $10^9m^3/d$ (60 Bcf/d). NGTL estimated that the demand for natural gas in North America, including LNG exports, will increase to approximately 3.4 $10^9m^3/d$ (121 Bcf/d) by 2030 from approximately 2.4 $10^9m^3/d$ (85 Bcf/d) in 2012. Canadian gas demand is forecast to increase from 261 $10^6m^3/d$ (9.2 Bcf/d) in 2014 to 506 $10^6m^3/d$ (17.9 Bcf/d) in 2030. North American natural gas demand is expected to be driven primarily by the increasing use of natural gas for electricity generation. Natural gas demand will also grow in the industrial sector, primarily in Alberta due to oil sands requirements, and in the sectors of natural gas vehicles and LNG exports.

Views of Participants

Progress Energy Canada Ltd. (Progress)

Progress stated it will be the provider of the gas supply for the PNW LNG Facility which will be owned by Pacific NorthWest LNG Limited Partnership (PNW LP) and operated by Pacific NorthWest LNG Ltd., as the general partner of PNW LP. Progress holds 62 per cent of interest in the PNW LP while the remainder is held by China Petrochemical Corporation, Japex Montney Ltd., Indoil Montney Ltd. and Petroleum BRUNEI Montney Holdings Limited.

Progress noted that it is anticipated that the global market for LNG cargoes will remain supply constrained for approximately the next five years, after which it expects a global surplus of LNG cargoes to emerge. PNW LP offtake partners have a need for cargoes from Canada provided first cargoes are delivered to their respective market areas in the early 2019 timeframe. Progress stated that if LNG deliveries are delayed past the first quarter of 2019 those offtake partners may decide to replace Canadian LNG cargoes with lower priced LNG supplies from proposed LNG projects located in other jurisdictions.

Alliance Pipelines Ltd. (Alliance)

Alliance submitted that the Board should condition the Project to ensure that any approvals flowing from this proceeding could only be used if the receipts from the Pipeline are required to serve LNG export projects. Without such exports, the Project's volumes, routing, and economics would change, differing substantially from the scenario reviewed in this proceeding. Alliance argued that in the absence of LNG exports, NGTL should submit a new application to justify the Project, although it could adopt the evidence from the current proceeding.

Export Users Group (EUG)

EUG is of the view that if the PRGT and the PNW LNG Facility are not constructed or operated as anticipated, the Project is not economically feasible. The Project facilities would be significantly underutilized if Progress could not supply the PNW LNG Facility.

Western Export Group (WEG)

WEG noted that NGTL is prepared to accept the Board's Certificate Condition 4, which requires NGTL to confirm, before commencing construction, that the PRGT and PNW LNG Facility are being developed and that contractual commitments to deliver natural gas to the PNW LNG Facility are still in place. However, WEG wanted to ensure that NGTL could not seek an alternative or supplementary relief from this condition at a later date. WEG submitted that if NGTL were unable to satisfy Condition 4, it should file a new application and the relevant evidence should be reviewed during a hearing.

4.2 Transportation

Views of NGTL

Firm Transportation Contracts

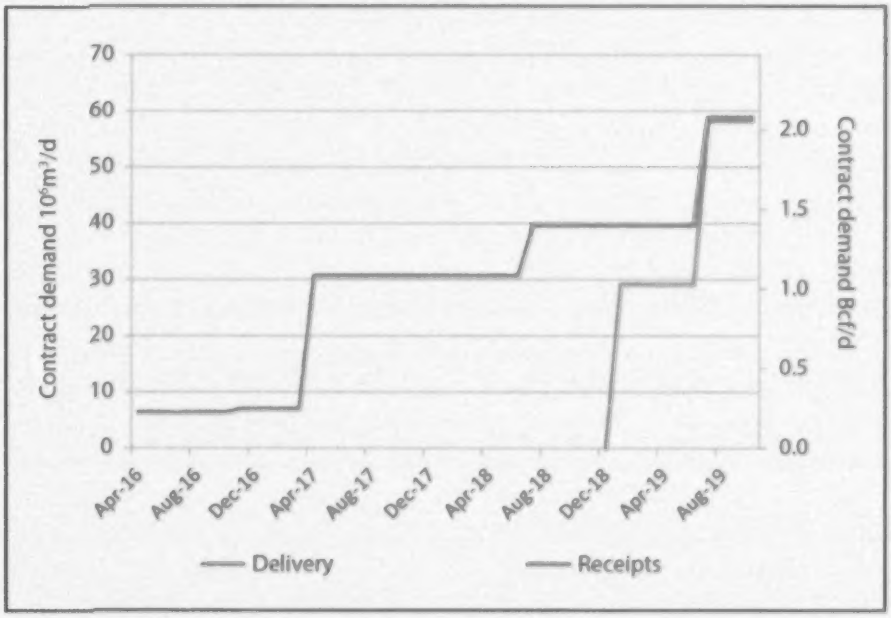
NGTL stated that the Project is underpinned by a portfolio of 10-year receipt contracts negotiated to provide flexibility to the producers as they develop their reserves. Table 4-2 shows the total contract volumes by shipper. Contracts at various receipt points along the proposed pipeline north of Mackie Creek are expected to come into effect in April 2016 and reach 39.6 $10^6 m^3/d$ (1.4 Bcf/d) in 2018 and 58.9 $10^6 m^3/d$ (2.1 Bcf/d) in July 2019 (see Figure 4-4). Progress has contracted for over 95 per cent of total contract volumes, with three shippers comprising the remainder. Progress' contract FT-D service for 2,340 TJ/d (58.2 $10^6 m^3/d$ or 2.1 Bcf/d) at the Mackie Creek Interconnection further underpins the Project. Half of the contract volumes start to flow in January 2019 and the remainder in July 2019.

Table 4-2: Total Receipt and Delivery Contracts by Shipper

Shipper	Receipt Contracts		Delivery Contracts	
	($10^3m^3/d$)	(MMcf/d)	($10^3m^3/d$)	(MMcf/d)
Shipper A	1,275	45		
Shipper B	567	20		
Shipper C	353	12		
Progress	56,655	2,000	58,185	2,054
Total	**58,850**	**2,077**	**58,185**	**2,054**

Sources: North Montney Project Application, March Project Update, 2.3 Updated Progress FT-R Contract Profile, Table 1: Primary and Secondary Term Contract Summary (A3V1T0); North Montney Project Application, Section 3 Transportation, 3.3.2 Contract Details and Volumes, page 3-6 and 3-7 (A3Q6S7)

Figure 4-4: Receipt and Delivery Contract Profile for North Montney Mainline



Sources: North Montney Project Application, March Project Update, 2.3 Updated Progress FT-R Contract Profile, Table 1: Primary and Secondary Term Contract Summary (A3V1T0);North Montney Project Application, Section 3 Transportation, Table 3-2: Primary and Secondary Term Contract Summary at Delivery Meter Station (A3Q6S7)

Seventy-five per cent of Progress' contracted receipt volumes are comprised of an initial five-year primary term followed by a five-year secondary term. During the primary term, the receipt service is only available at the receipt points designated in the contract. During the secondary term, Progress receipt contracts may be transferred, but only to other receipt meter stations on the NMML. The remaining 25 per cent of Progress' total receipt contracts are comprised solely of the secondary term, and may be transferred anywhere on the NGTL System. All of the FT-R contracts executed with other customers are comprised of a five-year primary term followed by a

five-year secondary term. During the secondary term, Progress may transfer its receipt contracts throughout the NGTL System, subject to the transfer provisions in the Tariff.

Pipeline Capacity

During the process of evaluating the options for transporting the requested volumes, NGTL considered three alternative pipe sizes including NPS 36, NPS 42, and NPS 48. NGTL selected the NPS 42 pipe size after comparing initial capital costs and the results of its cumulative present value COS analysis. A NPS 36 pipeline would not have enough capacity to meet contractual requirements beyond 2017, and a NPS 48 pipeline would have the highest initial capital cost.

NGTL chose the NPS 42 pipeline to extend for the full length of the Project. NGTL submitted that starting with a smaller diameter pipe on the northern end of the Project would not work for design, operational, economic, and environmental reasons. In particular, a smaller pipeline would result in greater operating costs from increased fuel consumption and could occasion further environmental impacts if a loop was required at a later date. A larger diameter pipe also presents operational efficiency benefits for inline inspections.

To ensure adequate pipeline capacity, NGTL established a design area including the proposed Project and the existing Groundbirch Mainline, and ending at the Saddle Hills Compressor Station. In addition to the contractual commitments with Progress and Shippers A, B and C, NGTL considered its supply forecast for the North Montney and Groundbirch areas to confirm that the expected flows do not exceed downstream capacity.

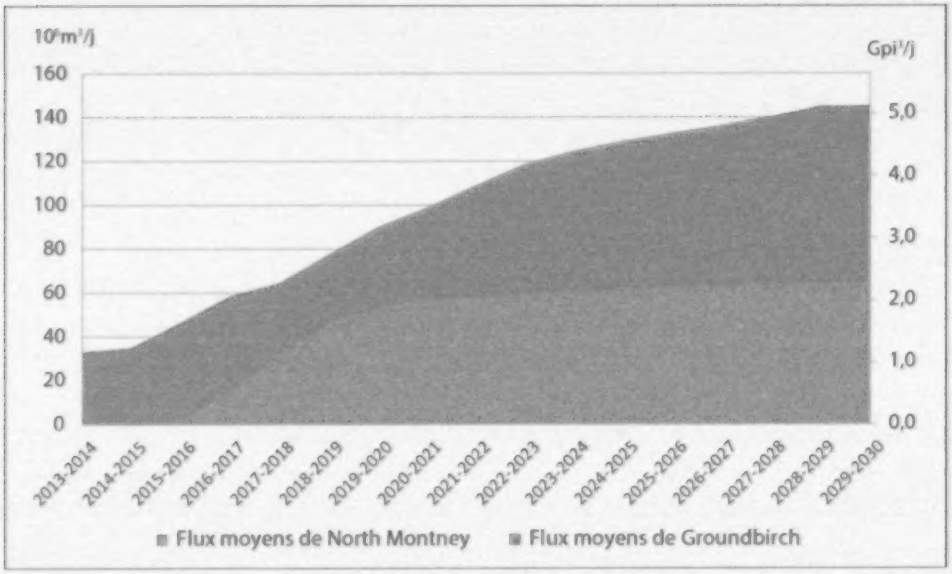
Prior to the commencement of deliveries at the Mackie Creek Interconnection in 2019, the volumes received on the Pipeline will flow onto the existing NGTL System downstream at Saturn. When the FT-D contracts with Progress at Mackie Creek come into effect in 2019, the majority of the volumes from North Montney will physically flow onto the PRGT pipeline through the Mackie Creek Interconnection. PRGT is a proposed 750 km, NPS 48 natural gas pipeline extending from near Fort St. John, BC to Prince Rupert, BC. The pipeline would have an initial capacity of 56.7 $10^6m^3/d$ (2 Bcf/d) and could be expanded to 102 $10^6m^3/d$ (3.6 Bcf/d). The PRGT pipeline will be owned and operated by TransCanada, a wholly owned subsidiary of TransCanada Corporation, NGTL's parent company.

NGTL's forecast assumes that, in addition to PRGT, another LNG pipeline will connect to the NGTL System within the design area at an interconnection close to the Groundbirch Receipt Point. Deliveries to this 'other' LNG pipeline are expected to commence during the 2019-2020 gas year.

On the northern end of the Aitken Creek Section of the Pipeline, the Project will connect to Aitken Creek Storage, the largest existing gas storage facility in BC, which currently connects to the Westcoast and the Alliance systems. The request for service at the proposed bi-directional meter station that would connect to Aitken Creek Storage is 28.3 $10^6m^3/d$ (1.0 Bcf/d). The maximum amount of gas that could flow through that meter station is 36.8 $10^6m^3/d$ (1.3 Bcf/d).

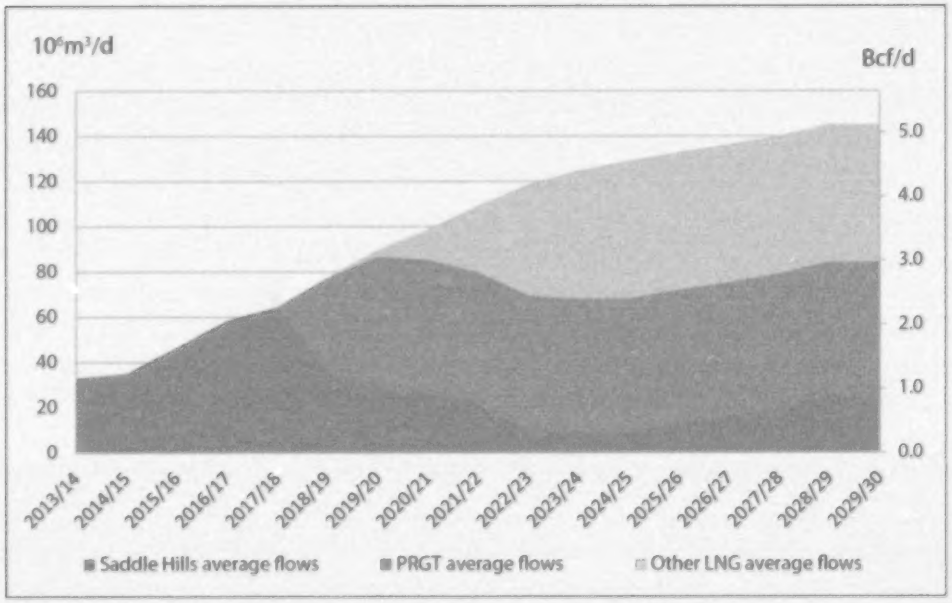
Figure 4-5 summarizes average forecast receipt flows for North Montney and Groundbirch areas. Figure 4-6 summarizes average forecast delivery flows from the design area to the three major delivery outlets described above (Saddle Hills Compressor Station, Mackie Creek Interconnection with PRGT and the interconnection with another unnamed LNG pipeline).

Figure 4-5: Average Forecasted Receipt Flows in the Design Area



Source: NGTL Response to NEB IR 5.8, Tables NEB 5.8-1 and 5.8-2, (A4C3A2).

Figure 4-6: Average Forecasted Delivery Flows in the Design Area



Source: NGTL Response to NEB IR 5.8, Tables NEB 5.8-1 and 5.8-2, (A4C3A2).

NGTL noted that roughly 300 MMcf/d of the capacity on the Project is not currently contracted. In addition, NGTL submitted that the capability of the Project could be increased from 67.8 $10^6m^3/d$ (2,394 MMcf/d) to 82.8 $10^6m^3/d$ (2,923 MMcf/d) with additional compression.

Mackie Creek to Saturn Portion of the Project

According to NGTL's volume simulation schematics, upon the commencement of service of the Mackie Creek Interconnection delivery point, the average flows on the portion of the Project extending from Mackie Creek to the existing Groundbirch pipeline at the Saturn Compressor Station are expected to drop from 32.7 $10^6m^3/d$ (1.2 Bcf/d) in 2018 to 1.5 $10^6m^3/d$ (0.05 Bcf/d) in 2022. NGTL submitted that the Mackie Creek to Saturn portion of the Project will nevertheless be utilized as gas will flow on the Mackie Creek to Saturn portion in either direction depending on the particular conditions. NGTL further submits that all of the Project facilities are required to meet the aggregate of the firm service requests in the North Montney area. NGTL was of the view that a NPS 42 pipeline is required on the Mackie Creek to Saturn section to meet the flow requirements over the long term.

NGTL stated that the flows on the Mackie Creek to Saturn segment could increase under conditions of an LNG outage. If the LNG export terminal were shut-down, Progress could use the section to transport volumes to other markets, place volumes into storage, or otherwise sell volumes in the NIT market. Likewise, if Progress' production did not meet the demand requirements of PNW LNG Facility, Progress could use the NIT market to source additional supply. NGTL stated that, in general, Progress needs the Project to connect to the existing NGTL System to balance the supply and demand because Progress' production and LNG demand are not expected to match up on a daily basis. With regard to pipeline size, NGTL stated that a pipeline with a diameter smaller than NPS 42 may not be able to meet Progress' contract requirements.

Flows on the Mackie Creek to Saturn portion could also increase over the long term as production in the North Montney increases. NGTL noted four additional requests for service on the Project beyond Progress and Shippers A, B and C, including one request for service that will connect to the system along the Mackie Creek to Saturn portion.

Capacity East of Saturn

The Project would connect to the Groundbirch Mainline which is a NPS 36 pipeline with a capacity of approximately 56.7 $10^6m^3/d$ (2 Bcf/d). The Groundbirch Mainline currently transports about 51 $10^6m^3/d$ (1.8 Bcf/d) of gas, exiting at Saddle Hills.

NGTL submitted that there will be enough capacity at the outlet of the design area at the Saddle Hills Compressor Station to accommodate forecast design flows from the North Montney and Groundbirch areas. After the Groundbirch Compressor Station commences service in April of 2017, the capability at the inlet to Saddle Hills Compressor Station will reach 87.8 $10^6m^3/d$ (3.1 Bcf/d), enough to transport forecast design flow requirements beyond 2017, given expected deliveries at the Mackie Creek Interconnection delivery point and another interconnection near the Groundbirch Receipt Point, which would feed other LNG exports.

The design flow forecast provided by NGTL assumed deliveries to PNW LNG Facility and one or more unnamed LNG projects. NGTL estimated that, without delivery to any LNG plant and assuming average flows on the Groundbirch Mainline, the maximum volume of North Montney supply that could be transported to Saddle Hills will decrease from 53.2 $10^6m^3/d$ (1.5 Bcf/d) in 2018/19 to 14.8 $10^6m^3/d$ (421 MMcf/d) in 2029/30.

NGTL submitted that customers facing a transmission constraint usually use a combination of strategies including finding other delivery points, putting the gas into storage, or decreasing

supply. NGTL noted that shippers could mitigate the impact of such constraints to production through the use of the Aitken Creek Storage facility to which the Project facilities would connect. If the capability of NGTL's facilities was exceeded, NGTL would probably impose curtailments on service, starting with interruptible service.

Views of Progress

Progress stated that it initially requires access to the NIT market prior to the start-up of the PNW LNG Facility. During this period, Progress will be increasing its production to reach the 56.7 $10^6 m^3/d$ (2.0 Bcf/d) production objective, and needs access to the NIT market in order to absorb this amount of gas.

After the commencement of delivery service at the Mackie Creek Interconnection, Progress will require access to the NIT market to manage operational fluctuations. Progress anticipates that the PNW LNG Facility and the upstream production facilities will run at a high annual load factor. However, there will always be periods of scheduled maintenance and unplanned outages where it will be necessary to access a liquid market to manage supply and demand fluctuations effectively. Progress indicated that there would be financial penalties in failing to meet certain conditions in its contracts for delivery of LNG. Nevertheless, Progress also indicated that if the price differential between global LNG prices and North American natural gas prices favored diverting supply to domestic markets, PNW LP offtake partners could do so in order to maximize netbacks. Conversely, depending on drilling costs and North American pricing, feed gas for the LNG facility could be more economically acquired from the NIT market.

Connection to the NIT market ensures that the PNW LNG Facility has adequate gas supply. Reliability of natural gas supply is a crucial factor for the local distribution companies in Asia that will be served by the PNW LNG Facility. Issues with reliability would result in large financial penalties for Progress and significant reputational damage to offtake partners who own limited partnership interests in PNW LP. Progress also submitted that PNW LNG facility demand requirements could increase over time. Eventually, the LNG facility could add a third processing unit which would increase the facility's capacity by approximately 28.3 $10^6 m^3/d$ (1.0 Bcf/d).

Views of Other Participants

Several participants expressed concerns about the utilization of the Mackie Creek to Saturn section of the pipeline after deliveries commence at the Mackie Creek Interconnection, as well as NGTL's ability to transport all North Montney receipts to markets beyond the design area in case of LNG outages.

Alliance

Alliance submitted that the Mackie Creek to Saturn portion will operate at very low throughput once the LNG plant starts service. In 2022, all flows from Progress receipt points (58 $10^6 m^3/d$ or 2.1 Bcf/d) will exit at Mackie Creek, while minor volumes of gas will flow on the section from east to west. Once the PNW LNG Facility is online, the Kahta to Mackie Creek portion will act as a "bullet line" connecting Progress' production to the PNW LNG Facility.

Alliance argued that the Board should condition any approvals so as to restrict the approvals to the Project as substantially applied-for, including the designation of the Mackie Creek Interconnection as a delivery point with supporting FT-D contracts.

ATCO

ATCO stated that the Project is designed to supply distant LNG markets in the Asian Pacific Rim. ATCO submitted that some of the incremental Project volumes may reach delivery points to Alberta local distribution companies (FT-D3) on occasion, but capacity constraints do not allow for the import of full Project volumes of 59.5 $10^6m^3/d$ (2.1 Bcf/d) on a year-round basis. In addition, Progress delivery contracts are not transferable for 20 years and 75 per cent of Progress receipt volumes face transferability restrictions. In ATCO's view, these contractual terms reveal the intent to predominantly use only one segment of the Project facilities. The Project opens up a new supply source, but it is designed to supply LNG markets, not the existing NGTL System.

EUG

EUG submitted that Progress' need for the Project to connect to the NIT market is temporary. Once the PRGT pipeline and PNW LNG Facility are in service, the connection to the NGTL System will only be required intermittently to address production imbalances or outages. Volumes will decrease after 2019 and the Mackie Creek to Saturn section will be utilized primarily during short-term periods.

EUG argued that Progress' ability to transport gas onto the existing NGTL System may be limited by flows from other shippers and will seldom reach 56.7 $10^6m^3/d$ (2 Bcf/d) without additional facilities for which NGTL has not yet applied. NGTL's physical facilities do not permit up to 58.5 $10^6m^3/d$ (2.065 Bcf/d) of Progress' receipt volumes being moved to other delivery points located east of Saddle Hills.

FortisBC

FortisBC submitted that the Project consists of two separate segments, each with a different purpose. FortisBC used the term "LNG Segment" for facilities extending from the northernmost end of the proposed Project and ending at the Mackie Creek Interconnection, which will be used to transport Progress production to the PRGT pipeline. Most of the volumes associated with the Project will be transported only on the LNG segment when gas flows to PRGT. FortisBC used the term "non-LNG segment" for facilities extending from Mackie Creek to the Groundbirch pipeline near the Saturn Meter Station. When the PRGT facilities are in operation, the volumes contracted by Progress will flow from the North Montney area to the Mackie Creek Interconnection and then west on the PRGT pipeline.

Only the very small volumes of Shippers A, B and C are contracted to flow southeast from Mackie Creek to Saturn on the non-LNG segment. FortisBC contended that the volume of those flows does not support the cost to construct and operate related facilities and, in particular, it does not support the construction of a NPS 42 pipeline. Post-2019, the non-LNG segment will be underutilized, though over time, it may attract additional volumes.

FortisBC submitted that NGTL cannot transport 56.7 $10^6m^3/d$ (2 Bcf/d) of flows from North Montney if gas does not flow to the PNW LNG Facility through the Mackie Creek Interconnection. This suggests that NGTL might have to apply to construct additional facilities.

Saulteau First Nations (SFN)

SFN agreed with arguments from Westcoast and FortisBC that the Project should be considered as two separate segments with substantially different purposes. The LNG segment extending from Kahta to Mackie Creek connects Progress' BC gas reserves to its affiliated LNG export facilities. All of Progress' contracted deliveries will flow through the Mackie Creek Interconnection to the PNW LNG Facility. The non-LNG segment will run from Mackie Creek Interconnection and terminate at the Groundbirch Mainline near the Saturn Receipt Meter Station. The volume of gas transported on this segment drops to conspicuously low levels once gas volumes start flowing to the PNW LNG Facility.

Further, the gas supply to be transported between Mackie Creek and Saturn is not required for the operation of the Alberta System and the flows could be accommodated by existing BC pipeline infrastructure.

WEG

WEG stated that in circumstances where there are no LNG export flows, gas received in the design area cannot be absorbed by the NGTL System downstream of the Saddle Hills Compressor Station. Beyond 2019, NGTL would have to construct additional downstream facilities to handle receipt volumes from the NMML should this volume no longer be exported from Canada.

Westcoast

Westcoast expressed concern about the existing uncontracted capacity on the Project as well as NGTL's ability to expand and extend the NMML in the future. NMML capacity exceeds the total volume of contracts from Progress and the three other shippers by approximately 11.3 $10^6m^3/d$ (400 MMcf/d). Moreover, Progress has the right to transfer up to 14.2 $10^6m^3/d$ (500 MMcf/d) of its secondary term FT-R contracts to receipt locations anywhere else on the NGTL System. Such transfers could further increase the amount of uncontracted capacity on the Project.

Westcoast also pointed out that the Project is 42 inches in diameter right up to its northern end, which leaves NGTL the option to extend it. An extension to the Project further north could duplicate and potentially by-pass Westcoast facilities in northeastern BC in the Fort Nelson area and the Liard and Horn River basins. Westcoast argued that a telescoping pipeline design that matches pipeline capacity to contract demand would almost certainly be less costly to install. Further, Westcoast submitted that the excess capacity provides a material competitive advantage to NGTL for future requests for gas transmission pipeline service in the North Montney area or beyond.

Westcoast noted that NGTL's schematics show that the average daily flow on the Mackie Creek to Saturn segment will decrease to 1,456 $10^3m^3/d$ (51.4 MMcf/d) in 2022. Consequently, Westcoast submitted that this 80 km NPS 42 section and the two new compressor stations at Saturn and Groundbirch will be highly underutilized once gas starts flowing to the PNW LNG Facility.

With respect to downstream capacity, Westcoast pointed out that the Project's pipe size is NPS 42 and is thus significantly larger than the NPS 36 inch Groundbirch Mainline, which is also fully contracted. Westcoast submitted that the maximum amount of North Montney supply that can be transported beyond the Saddle Hills Compressor Station to the existing NGTL System, assuming no deliveries to LNG projects, does not match the total volume of receipts associated with the Project. In the absence of deliveries at the Mackie Creek Interconnection, NGTL cannot receive the volumes contracted by Progress on a firm basis.

4.3 Ability to Finance

Views of NGTL

NGTL is a wholly-owned subsidiary of TransCanada PipeLines Limited (TransCanada), which in turn is owned by TransCanada Corporation. NGTL proposed to fund the construction cost of the Project from its parent company, TransCanada which expects to fund NGTL's company-wide capital program, including NGTL projects, through a combination of cash flow from consolidated operations, access to U.S. and Canadian capital markets, and cash on hand. In mid-2013, TransCanada and other subsidiaries of TransCanada Corporation had a committed, revolving credit facility capacity of about $4.7 billion. For the 12 months ending on 31 March 2013, TransCanada Corporation had a net free cash flow of nearly $1.3 billion.

NGTL provided reports from Moody's Investor Service, Inc., Standard and Poors and DBRS Limited that have assigned TransCanada "A-" credit ratings. DBRS has assigned an "A" level credit rating to NGTL's outstanding debt.

In this Hearing, while NGTL did not expressly indicate a willingness to undertake the Project on an at-risk basis, it did indicate that, in a situation where the Board determines that the proposed tolling methodology is not acceptable and it was otherwise prepared to issue that certificate with a condition NGTL would prefer that a condition be included in the disposition rather than simply having the Application denied as a whole.

During Project development and construction, NGTL has a receipt PEA and a delivery PEA with each major shipper. The receipt PEA between NGTL and Progress has various termination, extension, and trigger clauses that would require Progress to pay for capital costs spent by NGTL. Certain terms in the receipt PEA between NGTL and Progress are triggered in relationship to a decision date, defined as three months after the Board issues its Report (Decision Date). Progress has authorized NGTL to incur costs or expenses under the receipt PEA up to a maximum of $300 million plus applicable taxes on or prior to the Decision Date. After the Decision Date, Progress has authorized NGTL to incur costs under the receipt PEA up to $1.5 billion plus applicable taxes and a 25 per cent contingency. Changes or extensions to the receipt PEA may result in changes to the cost and scope of work and a delay to the estimated in-service date. If the PEA for delivery service to the Mackie Creek Interconnection is terminated for any reason, NGTL is not obligated to continue with the work underpinned by the receipt PEA. In addition, NGTL indicated it will not seek to construct the Project with any approvals that may result from this proceeding if the LNG exports and associated facilities forecast in its Application either develop at a significantly slower pace than forecast in the Application, or do not develop at all.

Under each PEA, NGTL can terminate the Project if it "fails to obtain any of the Company Approvals on terms and conditions satisfactory to Company." These "Company Approvals" include all necessary permits, certificates, licences, and authorizations from all governmental or regulatory authorities having jurisdiction over the construction of any facilities required by Progress for the contracted receipt and delivery service.

Views of Progress

Progress indicated there is no clause in either PEA expressly stating that it can terminate the Project if the applied-for tolling methodology is denied. However, Progress confirmed that, in its view, other clauses in the PEAs would allow termination in such circumstances.

The in-service date for the PRGT pipeline is expected to be on or before 31 December 2018. Progress has contracted for the entire capacity of the PRGT pipeline. TransCanada and Progress have agreed on the tolls and conditions of service and they are confidential. Progress stated that the PRGT pipeline has an estimated cost of $5 billion.

The importance that Progress attaches to the access to the NIT market is discussed in Chapter 3. Some of the Project features are driven by a requirement for supply certainty at the PNW LNG Facility, because Progress would suffer financial penalties for non-delivery under its LNG sales agreements.

Progress has not contracted for gas storage yet, but believes the Aitken Creek Storage facility would assist in managing supply/demand variations in both natural gas and LNG production.

Views of Other Participants

Intervenors made few comments regarding NGTL's ability to finance the Project, other than noting that the financing relied on shifting the risk to shippers on the NGTL System.

FortisBC contended that NGTL's proposal diffuses responsibility for future cost and risk of extensive pipeline facilities (such as the pipeline segment between Mackie Creek and Saturn) that clearly have no contractual coverage. FortisBC expressed concern that subsidization of the Project would result from the "shifting of long-term risks to all shippers on the NGTL facilities."

Westcoast noted that NGTL was not prepared to speculate whether the Project would proceed if the Board did not approve the tolling treatment requested in the Application, drawing attention to NGTL's statement that NGTL would determine whether or not to proceed with the Project based on various factors, including the applicable tolling.

4.4 Economic Feasibility

Views of NGTL

For the purpose of assessing or illustrating the long-term economics of the Project, NGTL provided total estimated receipt and delivery revenue of $3.63 billion over the contracted terms, based on the proposed 2014 tolls, and NGTL's existing tolling methodology, as shown in Table 4-3. NGTL indicated this total revenue would be $1.59 billion in NPV discounted to 2016, and noted this is over 90 per cent of the Project costs of $1.67 billion. NGTL expects this coverage ratio to rise further if receipt contracts were signed for a few more years beyond 2028.

Table 4-3: Summary of NGTL Evidence on Revenue Totals

	Receipt Information	Delivery Information
Contract Revenue total of $3.63 billion	Total Receipt Revenue 2016 to 2028 $1.51 billion	Total Delivery Revenue 2019 to 2039 $2.12 billion
Based on the following Contracts		
2016-2018	Portfolio of 10-year contracts building up from 2016-2018 and extending to 2028	NGTL expects Project to produce additional delivery revenues
2019-2028		2,340 TJ/d (2.054 Bcf/d) 20-year term of the respective delivery contracts
2029-2039	NGTL expects Project to produce additional receipt revenues beyond the term of the 10-year FT-R contracts to align with delivery contracted for 20 years	
and Using the Following Tolls Assumptions		
2016-2018	Five-year term FT-R ceiling toll	Not stated
2019-2028	Five year term FT-R average toll of 19.2 cents/Mcf ($6.78/10^{3}m^3)	Uses the five year FT-D Group 1 floor toll of 12.4 cents/GJ
2029-2039	Not applicable	

Source: NGTL North Montney Application, Vol.1, Section 6: Tolls and Financing, (A3Q6T0).

Views of Progress

Progress submitted that the Project meets the Board's economic feasibility test, noting that it has over 4.2 10^{12}m^3 (15 TcF) of proven gas resource and has secured markets for 62 per cent of the PNG LNG capacity. The PEA is terminable within a limited window. However, the Board's Certificate Condition 4 fully addresses this termination contingency by requiring a positive FID for the PNW LNG Project, as well as the continuation of the delivery PEA. Progress contends that Condition 4 allows the Board to issue its Part III recommendation regardless of its Part IV decision. However, Progress acknowledged there is potential that, if not granted the tolling treatment proposed in the Application, the Project would not proceed, at least in its current form. Progress commented on the issue of whether the Project is economically feasible in the event of a negative FID on the PNW LNG Project. Progress described the North Montney gas resource as vast and economically viable relative to other plays such as the Horn River. The pace of development of Progress' North Montney gas resources would be limited by its cash flow from

accessible markets. Without PNW LNG Project, the cash flow would be lower, with capital availability of approximately a $500 million dollars per year.

Views of CAPP

CAPP submitted that the Project supports developments of needed new markets for Northeastern BC gas. CAPP argued that the Project is economically feasible as the substantial contractual underpinnings, the magnitude of the economically recoverable resource, and market opportunities all provide reasonable assurance that the facilities will be utilized over the long term.

CAPP submitted that shippers on the existing NGTL System support designing new facilities for growth, as it is cost effective, environmentally sensible, and supports the long-run efficient use of facilities. CAPP described NGTL's established design philosophy as having in-place facilities that can meet the aggregate expected flows on the NGTL System. In the case of lines into producing areas, this includes having regard to the expected growth of the production. If flow patterns change, then NGTL makes modifications to its system to accommodate the changed flow patterns.

Views of Other Participants

ATCO

ATCO noted the minimum 10-year primary term of the FT-R contracts that helps ensure the Project facilities are physically used at high load factors over their expected life. ATCO agreed that this minimum term supports a finding of economic viability. ATCO's principal concern with the Project is who bears the responsibility for potentially underutilized facilities in the long term, noting that the purpose of this Project is receiving, transporting, and delivering gas to the distant LNG markets off of the BC west coast. ATCO drew comparisons to TransCanada Mainline capacity constructed in the 1990s to take Canadian gas to the US northeast, which ATCO contended became massively underutilized. ATCO expressed concerns that the new LNG market posed similar potential risks to be borne by shippers who remain on the NGTL System in the long term.

FortisBC

FortisBC recognized that for British Columbians to realize the benefits of the Province's significant natural gas resources, producers will require greater access to new and existing markets. However, FortisBC expressed concern that the Project, tolled inappropriately, would draw BC-produced gas away from that existing infrastructure. Falling volumes on the Westcoast System would cause a significant increase in the tolls paid by FortisBC to access gas supply, even without any further expenditure by Westcoast.

FortisBC suggested that Progress and NGTL could arrange between themselves how to share the costs and risks of the new facilities to serve the requirements of the PNW LNG Project, as arrangements between Progress and TransCanada had settled the sharing of the costs and risks of the PRGT pipeline. This would provide Progress with certainty on its transportation costs and enable a positive FID for the PNW LNG Project.

Referring to NGTL's revenue to cost ratios reproduced and summarized in Table 4-3 above, Dr. Makholm disputed the relevance and accuracy of the calculations. For 75 per cent of its total

receipt contract demand (42.5 $10^6m^3/d$ or 1.5 Bcf/d), during the second five-year term, Progress can transfer receipt service to any receipt point on the Kahta to Mackie Creek facilities. For the remaining 25 per cent (14.2 $10^6m^3/d$ or 0.5 Bcf/d), its 10-year term is all secondary term allowing Progress to move its receipt service to any receipt point on the NGTL System. In Dr. Makholm's view, this ability to shift receipt points outside of Project facilities has not been incorporated into NGTL's NPV Revenue calculations. Further, similar concerns related to revenue counted from contracts with Shippers A, B and C, and potential revenue from contracts to be offered on similar term to any additional customers contracting in future.

Westcoast

Westcoast stated that if the applied-for toll treatment is denied, then the Board will be unable to conclude that there is a need for the Project. Westcoast acknowledged that, if Progress proceeds with its FT-D and FT-R PEAs, the Project is likely to proceed. However, Westcoast argued that Progress provided no evidence that it would proceed with its PEAs if NGTL's tolling application is denied. Further, Westcoast contended that evidence of need in that situation would not be rectified by NGTL's response to Certificate Condition 4.

Westcoast submitted that Condition 4 does not address economic feasibility and does not allow the Board to recommend the issuance of a Certificate without having proof of economic feasibility. NGTL had advised that it would not commence construction of the Project unless Progress made a positive FID on the PNW LNG Project and, in the event of a negative FID, NGTL would seek an amendment to the Certificate. However, Westcoast submitted that the purpose of Condition 4 was to prevent NGTL from constructing the Project in a situation when LNG facilities are not proceeding, as NGTL has provided no information about the additional facilities downstream of Saturn that would be required in that scenario.

4.5 Views of the Board on Economic Feasibility and the Need for the Project

The factors considered by the Board in making a determination of economic feasibility are outlined at the beginning of Chapter 4. Some of these considerations are affected by the toll treatment. The Board evaluated these aspects on their own merit, and in light of the Part IV findings and direction provided in Chapter 3.

Supply

The Board finds that the evidence demonstrates that there is adequate supply to support the Project.

Markets

The Board finds that if the 2,340 TJ/d (58.2 $10^6m^3/d$ or 2.1 Bcf/d) of natural gas expected to flow on the Project can access the global LNG market via the proposed PRGT pipeline and PNW LNG Facility, that market is significant and will be able to absorb the Project volumes. In the period preceding the start-up of the PNW LNG Facility in 2019, the receipt contracts build up to 39.6 $10^6m^3/d$ (1.4 Bcf/d) by 2018. This gas will access the integrated and well-developed North American market. When additional gas enters an existing widespread and well-developed

market, it may find new consumers, or cause some displacement of existing volumes. Prices and contracts will determine how the market absorbs the additional gas from this Project.

NGTL acknowledged that if there were no deliveries to LNG export terminals, the Project would require significant reconfiguration. The Board agrees, as most of the North Montney gas would have to flow to the existing NGTL System in the absence of such exports. Under this scenario, there is insufficient evidence to assess the outlook for gas demand in relevant markets, the selection of design capacity, or the impact of the Project on costs and tolls.

Therefore, the Board finds that the Project should not be constructed as proposed without assurances that it will serve to supply the PNW LNG Facility. The Board's **Condition 4, (Appendix II and Appendix III)** specifies that NGTL shall file with the Board, before commencing construction, confirmation that Progress has made a positive FID on the proposed PNW LNG Project, TransCanada is proceeding with the construction of the PRGT pipeline, and the delivery contracts between NGTL and Progress continue to be in effect for the same quantity of gas reaching 2,340 TJ/d by 2019.

Transportation Contracts and Capacity

The Board finds that there are sufficient contracts to support the design capacity of the Kahta to Mackie Creek facilities. Condition 4, which requires confirmation of delivery contracts, assures the Board that these facilities will have commercial support and that the capacity of the Kahta to Mackie Creek portion is appropriate to transport the volumes associated with the Project to downstream markets.

In addition, the Board finds that the Mackie Creek to Saturn portion is likely to be well used in the period up to the 2019 expected start of flows to PRGT at the Mackie Creek Interconnection. NGTL is likely to have sufficient capability to take volumes into the existing NGTL System during this period as the receipt contracts build up to 39.6 $10^6 m^3/d$ (1.4 Bcf/d) by 2018. However, based on the evidence presented, the Board finds that the average volumes expected to be transported on the Mackie Creek to Saturn Section will decrease substantially when gas can be delivered to PRGT at the Mackie Creek Interconnection. At this time, Progress will take delivery at the Mackie Creek Interconnection of the majority of gas volumes received on the NMML and only minimal volumes will physically flow to the existing NGTL System under contracts with Shippers A, B and C. However, if deliveries to the PNW LNG Facility are periodically constrained, the Board finds that the volumes that would have otherwise been delivered to the Mackie Creek Interconnection will make use of the Mackie Creek to Saturn portion of the Project.

The Board finds that the expected flows on the Mackie Creek to Saturn portion are not sufficient to support a finding that the design capacity is appropriate for the Mackie Creek to Saturn facilities, nor that these facilities will be well used. Nevertheless, the Board is satisfied that some capacity is required to satisfy the requests of customers for the period prior to the planned start of deliveries to PRGT at the Mackie Creek Interconnection, to ship small volumes for Shippers A, B and C and to provide Progress with access to the existing NGTL System when deliveries to the PNW LNG Facility are constrained, or in the case of constraints north of the Mackie Creek Interconnection. With the tolling directions made in Chapter 3, the separation of cost pools places the accountability and risks for the capacity selected on NGTL and its North

Montney shippers and, therefore, the potential risks of any mis-sizing of facilities will not be borne by shippers on the existing NGTL System.

Financing

The Board is satisfied that NGTL is capable of financing the Project through TransCanada and TransCanada Corporation, which has ample access to financial markets.

Economic Feasibility

The Board finds that the facilities are economically feasible based on the above-noted supply reserves and markets, as well as Condition 4, and assuming NGTL's willingness to undertake the Project on the terms specified by the Board. In particular, Condition 4 plays a key role in the Board's finding on economic feasibility as it requires confirmation of delivery contracts and downstream capacity.

Progress indicated that it expects that there would be material economic differences in its overall LNG project if the Board did not accept NGTL's proposed tolling treatment. However, Progress did not indicate whether these material differences would lead to reduced profits, or lead to a decision to reduce the pace of development of Progress' reserves, or to reduce Progress' contracts for receipt and delivery with NGTL. The Board's finding on economic feasibility assumes that Condition 4 will be met, confirming the delivery contracts and downstream capacity.

NGTL has argued that the ratio of additional revenue to incremental costs demonstrated economic viability. In the circumstances of this Project, the Board does not find that argument persuasive, particularly during the Transition Period when North Montney shippers use the Project facilities and the existing NGTL System. The Board gave limited weight to the ratios of revenues and costs, as the revenue estimates used illustrative tolls prepared using the proposed tolling methodology, which was rejected by the Board.

The Board has considered the risks of overbuilding, which could unfairly burden other shippers and, in a competitive environment, could have impacts on commercial third parties. The Board is of the view that Condition 4 and the tolling direction contained in Chapter 3 mitigate such risk, and appropriately assign any risk of overbuilding.

The Board considered CAPP's comments that shippers support NGTL's design philosophy. Shippers' interests may be aligned or shared with that of a pipeline company. However, in a competitive environment, that shared interest is not necessarily sufficient evidence supporting the public interest. The Board's public interest consideration is broader than one pipeline and its shippers.

Some participants contended that the Board cannot make a finding that the Project is economically feasible if it did not accept NGTL's proposed tolling. For example, Westcoast drew comparisons to GH-001-2012 where, after finding the tolling method inappropriate for the Komie North Section of NGTL's Komie North Extension Application, the Board concluded that evidence to support the economic feasibility had fallen away.[10] However, many facts and circumstances of this Project differ from GH-001-2012. One difference from GH-001-2012 is

[10] NEB Report for Proceeding GH-001-2012 dated January 2013, NGTL – Northwest Mainline Komie North Extension, page 42, PDF page 50 of 180, (A50255).

that in this Project, the Kahta to Mackie Creek portion of the Project is designed to meet the contract totals as they build up. Also, facilities are required from Mackie Creek to Saturn and the Board direction in Chapter 3 places the accountability for the sizing of these facilities on NGTL. In this case, the Project may proceed even with a denial of the proposed tolling.

In addition, some participants argued that Project shippers would pay limited incremental revenue to NGTL during the Transition Period relative to a shipper coming onto the NGTL System further downstream. The Board agrees that the limited incremental revenue in the Transition Period is a concern. However, for the Project, the Board has addressed this concern through its direction in Chapter 3 requiring NGTL to accumulate certain costs in a deferral account during the Transition Period. Connecting the revenue to the costs of the Project will better demonstrate the commercial support for economic feasibility. The subsequent handling of the deferred costs will be addressed when NGTL files its tolling methodology for the Long-Term Phase.

While NGTL did not propose an alternative requested tolling treatment, NGTL did indicate a preference to have a Certificate approval, with conditions and direction from the Board on what the Board finds acceptable, rather than a denial. The Board findings on economic feasibility and need for the Project depend on the Board's direction in Chapter 3 and on compliance with Condition 4. NGTL has the latitude to either take the risk itself, or to share risk with the North Montney area shippers.

Chapter 5

Facilities and Emergency Response Matters

The Board uses a risk-informed life cycle approach in regulating NEB facilities and activities to be safe and secure from their initial construction through to their abandonment. In consideration of the safety and security of proposed facilities, the Board assesses, at a conceptual level, whether the facilities are appropriately designed for the properties of the product being transported, the range of operating conditions, and the human and natural environment where the facilities would be located. Specific considerations include the company's approach to engineering design, integrity management, security, emergency preparedness, and health and safety.

When a company designs, constructs, operates or abandons a pipeline, it must do so in accordance with the NEB's *National Energy Board Onshore Pipeline Regulations* (OPR), the commitments made during the hearing, and the conditions attached to any approval. The OPR references applicable engineering standards. Pertinent to this Project is the Canadian Standards Association Standard Z662-11 Oil and Gas Pipeline Systems (CSA Z662-11). The company is responsible for ensuring that the design, specifications, programs, manuals, procedures, measures and plans developed and implemented by the company are in accordance with the OPR which includes by reference CSA Z662-11.

5.1 Description of Facilities

According to the Application, the North Montney Project (Project) is comprised of approximately 301 km of 1,067 mm (NPS 42) pipeline in two sections, namely approximately 182 km in the Aitken Creek Section and approximately 119 km in the Kahta Section with a maximum operating pressure (MOP) of 9930 kPa for the entire Project. Pipe material grade for the Aitken Creek Section is 483 MPa with varying wall thicknesses. Pipe material grade for the Kahta Section is 483 MPa with varying wall thicknesses.

NGTL submitted that the Project includes a total of three compressor stations with bi-directional capability: two on the Aitken Creek Section of the proposed NMML (Aitken Creek and Saturn Compressor Stations) and one on the existing Groundbirch Mainline (Groundbirch Compressor Station). The Project will have 16 receipt meter stations along the NMML: 6 on the Aitken Creek Section and 10 on the Kahta Section. One of the meter stations will be a bi-directional storage meter station, which would connect the Aitken Creek Section to the Aitken Creek Storage facility (Aitken Creek Interconnect). One of the meter stations would accommodate delivery of gas flows into the proposed Prince Rupert Gas Transmission (PRGT) system (Mackie Creek Interconnection). The Project will have 12 main line block valves at various locations. The Project will also include a total of four permanent launching and receiving facilities for cleaning and in-line inspection (ILI), one bi-directional pig trap at the termination point of the Kahta Section, two bi-directional pig traps near the Mackie Creek Interconnection and a bi-directional pig trap near the Aitken Creek Interconnect (which will be temporary), and one bi-directional pig trap near the existing Saturn Receipt Meter Station.

5.2 Jurisdiction

Views of Saulteau First Nations (SFN)

In its final argument, SFN submitted that the Board must first determine the threshold issue of whether the proposed Project falls within federal jurisdiction. In support of its argument that the Project falls outside federal jurisdiction, SFN stated the Project is located entirely within BC, it lacks a high degree of physical interconnection with the NGTL System, the Project and the PRGT are dependent on one another to proceed, and once the PRGT is in operation, the pipeline segment connecting the Project to the rest of the NGTL System will be virtually unused.

Views of NGTL

NGTL disputed that the Project should be provincially regulated and stated that the Project meets the legal test established by the Supreme Court of Canada in *Westcoast Energy Inc. v. Canada (National Energy Board)*.

Views of the Board

Based on SFN's final argument and the evidence on the record in this proceeding, the Board is not satisfied that the Project falls outside of the NEB's jurisdiction to regulate.

Jurisdiction was not at issue in these proceedings. It is not an issue in the List of Issues published by the Board in its Hearing Order on 5 February 2014. No evidence was adduced specifically on the issue of jurisdiction. No notice of constitutional question was served on the Attorney General of Canada and the attorney general of each province as required by section 57 of the *Federal Courts Act*. Jurisdiction was not otherwise raised in the proceedings until SFN raised it in its final argument.

The arguments raised by NGTL and Intervenors (including SFN) regarding the degree of integration between the Project and the interprovincial NEB-regulated NGTL System were made in respect of whether the rolled-in tolling methodology currently used to calculate tolls on the NGTL System is appropriate for calculating tolls for this Project. The Board's consideration of the concept of integration was restricted to that legal test, given that jurisdiction over the Project was not at issue.

The Board's decision is without prejudice to any potential future jurisdiction applications should the circumstances surrounding the Project change. The Board may consider any future applications independently based on the specific facts that exist at that time.

5.3 Design, Construction and Operation

5.3.1 Codes and Standards

Views of NGTL

NGTL stated that the Project would be designed, constructed and operated in accordance with the OPR, CSA Z662-11 and various other industry standards.

Views of Participants

No participants expressed concerns with the respect to the codes and standards for the Project.

Views of the Board

The Board is satisfied that the general design of the Project is appropriate for the intended use. The Board is further satisfied that the Pipeline and associated facilities would be constructed in accordance with the widely accepted standards including the OPR and CSA Z662-11, for their design, construction, location, and operation. The Board imposes **Condition 2 (Appendices II and III)** requiring NGTL to construct and operate the Project in accordance with the specifications, standards, and other information referred in its Application, or as otherwise agreed to during questioning or in its related submissions. In addition, the Board imposes **Condition 21 (Appendix II) and Condition 5 (Appendix III)** requiring NGTL to update its Commitments Tracking Table to reflect commitments made throughout this proceeding.

5.3.2 Material Specifications

Views of NGTL

NGTL stated that the mainline pipe material grade for the Aitken Creek Section is 483 MPa with wall thicknesses of various sizes. Pipe material grade for the Kahta Section is 483 MPa with varying wall thicknesses. All pipe will be in accordance with the CSA Z245 standard for steel pipe, fittings, flanges and valves.

NGTL stated that the pipe material for compressor stations and meter stations will be designed in accordance to the CSA Z245 standard for steel pipe, fittings, flanges and valves. The MOP for the facilities will be 9,930 kPa.

NGTL submitted that all purchased items and contracted services will be obtained from suppliers and contractors which have been pre-qualified by TransCanada's internal supplier management and pre-qualification procedures.

Views of Participants

No participants expressed concerns with the respect to the material specifications.

Views of the Board

The Board is of the view that the selected pipe grades for the Project meet the requirements set out in CSA Z662-11. NGTL's Quality Management System (QMS), including the purchasing of the pipe for the Project, is appropriate. The Board imposes **Conditions 19(b) and 20 (Appendix II)** requiring NGTL to file with the Board a field joining program and its final pipe specification at least 14 days prior to start of any joining activity.

5.3.3 Geotechnical Design

5.3.3.1 Muskeg

Views of NGTL

NGTL submitted a Ground Truth Study as part of its geotechnical information collected by BGC Engineering Inc. The study highlights that the pipeline route crosses a total length of approximately 50.5 km of muskeg of varying thickness.

NGTL submitted that potential buoyancy control measures for constructing the pipeline in muskeg include continuous concrete coating, swamp (saddle) weights, river (bolt-on) weights and screw anchors.

Views of Participants

No participants expressed concerns with the respect to the proposed muskeg mitigation measures.

Views of the Board

The Board is satisfied that NGTL's mitigation measures in the design of the pipeline through zones of muskeg are appropriate and in accordance with industry practices. The Board imposes **Condition 41 (Appendix II)** requiring NGTL to file with the Board a report that includes a summary of its final construction through zones of muskeg.

5.3.3.2 Permafrost

Views of NGTL

NGTL submitted a Ground Truth Study as part of its geotechnical information collected by BGC Engineering Inc. The study highlighted that the pipeline route crosses a total length of approximately 160 m of discontinuous permafrost of varying thickness in the Kahta Section and indicated that no permafrost was present in the Aitken Creek Section.

NGTL submitted that in areas of discontinuous permafrost, mitigation measures will be implemented during field installation, as necessary. Examples of such measures include:

- installing heavy wall pipe encompassing the transition between discontinuous permafrost areas and non-permafrost areas to reduce the effects of settlement;
- installing buoyancy control to inhibit upward movement of the pipeline;
- reducing disturbance of vegetation and the surficial organic layer, where feasible;
- installing stub berms and surface water diversion berms;
- over-excavating high ice-content soils, if feasible, and installing the pipe deeper; and
- reclaiming areas as soon as feasibly possible after construction.

Views of Participants

No participants expressed concerns with the respect to the proposed permafrost mitigation measures.

Views of the Board

The Board is satisfied that NGTL's mitigation measures in the design of the pipeline through zones of isolated patches of permafrost are appropriate. The Board imposes **Condition 42 (Appendix II)** requiring NGTL to file with the Board a report summarizing its final construction through zones of permafrost.

5.3.3.3 Slope Stability

Views of NGTL

NGTL has stated that significant slopes along the entire pipeline route have been identified and reviewed for slope stability issues. Mitigation measures for design and construction, where required, may include:

- micro re-routes to avoid unstable slopes;
- detailed geotechnical investigation to understand the nature of instability if it is not possible to avoid the area;
- implementation of slope stabilization measures, including horizontal drains and/or toe buttress, where applicable;
- implementation of erosion protection measures, particularly at toe areas of watercourse crossings;
- diligent effort during construction to avoid re-activation of old slides;
- selection of heavy wall pipe to increase the capacity of the pipeline in accommodating additional strains potentially induced by slides;
- selection of low-friction backfill, where required and applicable, to minimize the impact of potential slides; and
- selection of reduced depth of cover to minimize the impact of potential slides and to facilitate strain relief if necessary.

Mitigation measures for the operation phase, if required, may include:

- detailed geotechnical investigation and engineering assessment to understand the nature of the slides and their potential impact to pipe integrity;
- monitoring of ground movement and/or pipe strains;
- assessment of pipeline deformation using in-line inspection data;
- implementation of slope stabilization measures, including horizontal drains and/or toe buttress, where applicable;
- strain relief, where necessary; and
- pipe realignment, including placing pipeline on surface with mechanisms to accommodate sliding of ground.

Views of Participants

No participants expressed concerns with the respect to the slope stability mitigation measures.

Views of the Board

The Board is satisfied with NGTL's mitigation measures in the design of the pipeline through areas of slopes and slope instability. The Board imposes **Condition 31 (Appendix II)** requiring NGTL to file with the Board mitigation measures to be employed in areas of slope instability and **Condition 40 (Appendix II)** requiring NGTL to file with the Board a report summarizing its final construction through zones of slope instability.

5.3.4 Watercourse Crossings

Views of NGTL

NGTL stated that there are a total of 87 watercourse crossings for which it will use three crossing techniques: open cut, isolation cut and horizontal directional drilling (HDD). NGTL hired Hatch Mott McDonald (HMM) to provide HDD feasibility studies and have submitted that the Pine River, Peace River, Halfway River, Farrell Creek and Sikanni Chief River will be HDD and have provided HDD feasibility studies for all crossings. HMM has submitted that all but the Sikanni Chief River crossing would be HDD feasible and recommends the Sikanni Chief River be a trenched crossing. NGTL submitted that HDD will be the primary crossing method for all above listed watercourse crossings with open cut or isolation as the contingency installation method. NGTL submitted studies regarding HHD feasibility prepared by Hatch Mott McDonald (HMM) in relation to the Pine River, Peace River, Halfway River, Farrell Creek and Sikanni Chief River. HMM claims that all crossings except the Sikanni Chief River crossing would be HDD feasible. HMM recommended the trenched crossing technique for the Sikanni River crossing. NGTL submitted that HDD will be the primary crossing method for all above listed watercourse crossings with open cut or isolation as the contingency installation method.

Views of Participants

West Moberly First Nations (WMFN) expressed disagreement with NGTL regarding the feasibility of an HDD crossing of the Peace River at the WMFN selected location. WMFN hired Brierley Associates, a HDD consultant that completed a desk top study and concluded that although WMFN's preferred crossing location was technically feasible it was at the limits of industry standard practice and the possibility of an unsuccessful crossing was greater than the final NGTL chosen location.

Views of the Board

The Board is satisfied with the approach to HDD adopted by NGTL. The Board agrees that HDD can be a very effective technique for the installation of pipelines in sensitive areas, and that the success of HDD installations for pipeline construction depends on accurate HDD feasibility assessments, proper design and planning, and actual conditions encountered during the execution of the HDD. The Board imposes **Condition 29 (Appendix II)** requiring NGTL to file its horizontal directional drilling execution program.

5.3.5 Depth of Cover

Views of NGTL

NGTL stated that the pipeline will generally have a minimum depth of cover of 0.9 m. Depth of cover will increase in the following circumstances;

- agricultural lands will have a minimum depth of cover of 1.2 m;
- road crossings will have a minimum depth of cover of 1.5 m or as agreed to with the relevant statutory authority or third-party owner, whichever is greater;
- buried utility and foreign pipeline crossings, above or below the pipeline, will have a minimum clearance of 300 mm or as agreed to with the third-party owner, whichever is greater; and
- the minimum depth of cover for pipeline crossings of watercourses with defined beds and banks will be 1.5 m. Increased depth of cover may be required at locations where there is a potential for scouring of the watercourse bed. The requirement for increased depth of cover will be evaluated as engineering design and construction planning progresses.

Views of Participants

No participants expressed concerns with the respect to the depth of cover.

Views of the Board

The Board is satisfied with NGTL's proposal to bury the Pipeline to a minimum depth of 0.9 m. The Board notes the increased buried depth of 1.2 m and 1.5 m exceeds the requirements of CSA Z662-11 and will accommodate ordinary agricultural practices and road crossings. The Board also notes and is satisfied with NGTL's commitment to bury the pipe at an increased depth of cover in locations where there is potential for scouring of the watercourse bed.

5.3.6 Welding and Non-destructive Examination (NDE)

Views of NGTL

NGTL stated that all welding and NDE testing of welds will be conducted in accordance with the requirements of CSA Z662-11 and the OPR. For all high pressure gas piping designed to CSA Z662, NGTL will use 100% NDE coverage. For all other piping systems, NGTL selects material and designs joints in accordance with American Society of Mechanical Engineers ASME B31.3-2010, Chemical Plant and Petroleum Refinery Piping, as referenced in Clauses 4.14.2.11, 5.1.1, 7.2.4 and 8.1.7 of CSA Z662-11. NGTL will ensure that the joints are examined in accordance with Clause 7.10.3 of CSA Z662-11.

Views of Participants

No participants expressed concerns with the respect to the welding and NDE.

Views of the Board

The Board is satisfied with NGTL's commitment that welding specifications and procedures will be developed and welders will be qualified in accordance with the requirements of OPR and CSA Z662-11. The Board imposes **Condition 19(b) and (c) (Appendix II)** requiring NGTL to file field joining and field pressure testing programs. The Board also imposes **Condition 28 (Appendix II)** requiring NGTL to maintain welding and non-destructive examination procedures at each construction site.

5.3.7 Pipeline Integrity

5.3.7.1 Coating

Views of NGTL

NGTL has submitted that the primary coating for the external surface of the belowground pipe will be fusion bonded epoxy. Girth welds will be coated in the field and will be protected with a liquid applied coating. Abrasion-resistant coating will be used where pipe is installed using boring, drilling or other methods that could cause abrasion to the coating during installation. Heavy wall pipe at compressor stations will be protected with a dual layer fusion bonded epoxy consisting of a corrosion protection base layer in conjunction with a fusion bonded epoxy abrasive resistant overcoat. Belowground assembly piping will be protected with a suitable liquid applied coating. Aboveground piping will be primed and painted.

Views of Participants

No participants expressed concerns with the respect to the coating.

Views of the Board

The Board is satisfied that NGTL has appropriately considered issues related to coating and integrity threats to the pipeline during construction and operation. The Board finds the coating measures to be appropriate for the Project.

5.3.7.2 Cathodic Protection (CP)

Views of NGTL

NGTL submitted that in addition to the pipe coating, an impressed current CP system will be installed. NGTL asserts that deep ground beds are preferred to minimize surface ground disturbance and to locate the ground bed in a more stable operating environment where it is less likely to be subject to surface environmental conditions. Sacrificial anodes may also be used at specific locations, which will be identified during detailed design.

Views of Participants

No participants expressed concerns with the respect to the CP.

Views of the Board

The Board is satisfied that NGTL's CP measures are appropriate for the Project. The Board imposes **Condition 30 (Appendix II)** requiring NGTL to file a detailed description of the specific measures NGTL will implement for maintaining adequate CP under concrete coating or weights in wetland areas.

5.3.7.3 In-Line Inspection (ILI)

Views of NGTL

NGTL has submitted that it will install in-line inspection (ILI) facilities at time of construction of the pipeline. ILI for the Aitken Creek Section will be one bi-directional pig trap installed near the existing Saturn Meter Station, two bi-directional pig traps installed near the Mackie Creek Interconnection and a bi-directional pig trap installed near the Aitken Creek Interconnect. To facilitate ILI for the Kahta Section, the bi-directional pig trap near the Aitken Creek Interconnect will be relocated to the termination point of the Kahta Section, following the inspection of the Aitken Creek Section within the first year of operations. In addition, a bi-directional pig trap will be installed near the existing Saturn Meter Station to facilitate future ILI on the existing Groundbirch Mainline (Saturn Section).

NGTL has committed that post commissioning inspections will occur in the first year of operation using a high resolution metal loss, geometry and geospatial ILI tools. This inspection will provide a baseline for threat management of the Project in operations. Annually, all threats will be reviewed and the Pipeline Maintenance Plan (PMP) will be developed and implemented.

Views of Participants

No participants expressed concerns with the respect to the ILI.

Views of the Board

During the early stages of operation, an ILI provides important data on the integrity status of the pipeline. Comparing this baseline data with subsequent ILI runs enhances a company's ability to identify potentially threatening changes to the integrity of the pipeline. The Board is satisfied with NGTL's plans to conduct ILI baseline assessments within the first year of Pipeline operation. The Board is satisfied with the commitment from NGTL to conduct ILI baseline assessments of Groundbirch Mainline prior to flow reversal. The Board is of the view that ILI is a widely used pipeline industry best practice and state of art technology to monitor the condition of a pipeline. If a Certificate is issued and NGTL commences construction, the Board encourages NGTL to provide information to landowners should any pipe integrity concerns arise on their lands.

5.3.7.4 Pipeline Maintenance Plan (PMP)

Views of NGTL

NGTL has stated that selected activities for managing threats are captured annually in the PMP. Activities that may be considered for risk reduction and threat control include:

- monitoring, such as patrols, leak detection, CP surveys and operating conditions, which are used to detect the presence of threats;

- prevention methods, such as CP, physical barriers and signage, which are used to protect against the likelihood of damage and failure;
- assessment methods, such as ILI, hydrostatic testing and direct assessment, which are used to determine the actual condition of the pipeline;
- remediation, such as recoating or pipe repairs, which are used to correct a known pipeline condition issue; and
- mitigation methods, such as pressure reduction, replacement or relocation of pipeline, which are used to reduce the consequences of a failure.

Views of Participants

No participants expressed concerns with the respect to the PMP.

Views of the Board

The Board has reviewed the submitted information and is of the view that the PMP is adequate. The Board notes NGTL's commitment that if a Certificate is issued for the Project, the Project will be integrated into NGTL's PMP.

5.3.7.5 Integrity Management Plan (IMP)

Views of NGTL

During operations, NGTL uses a company-wide IMP, which uses coordinated risk-control measures designed to ensure all pipe assets are operated and managed to:

- minimize any safety impact to the public and employees;
- minimize the frequency and consequences of pipeline incidents, damage and failure;
- minimize effects on the environment;
- protect the installed pipelines and facilities through effective security;
- ensure compliance with regulatory requirements; and
- maintain service reliability.

Views of Participants

No participants expressed concerns with the respect to the IMP.

Views of the Board

The Board has reviewed the submitted information and is satisfied that the Project will be incorporated into NGTL's IMP once operations commence. The Board requires companies to develop, implement and maintain an IMP that anticipates, prevents, manages and mitigates conditions that could adversely affect safety or the environment. The IMP is a continuous improvement process and is applied throughout the lifecycle of a Project.

5.3.7.6 Operations

Views of NGTL

NGTL stated that the facilities would be monitored and controlled through the TransCanada's Operations Control Centre (OCC), located in Calgary, Alberta. The OCC uses a computer-based supervisory control and data acquisition (SCADA) system to continuously monitor and control pipeline operation, including valves, compressor and metering facilities. The OCC is staffed 24 hours a day, but if it becomes unavailable, a Backup Control Centre is available at all times.

NGTL has submitted that at receipt meter stations, analyzers are installed to ensure gas quality. Analyzers continuously monitor the gas flow and, if high levels of H_2S or H_2O are detected, they cause the station block valves to close automatically. This isolates the station from the pipeline system. Meter station status is monitored through the OCC.

Views of Participants

No participants expressed concerns with the respect to the operations.

Views of the Board

The Board has reviewed the submitted information and is of the view that the proposed monitoring and control of pipeline operation are adequate. The Board notes NGTL's commitment that if a Certificate is issued for the Project, all facilities will be monitored through the TransCanada Operations Control Centre using a computer-based SCADA to continuously monitor and control the operation of the pipeline and facilities.

5.4 Emergency Response, Safety and Security

Views of NGTL

NGTL stated that in the event of an emergency, such as a line break, pipeline block valves are equipped with actuators with low pressure detection that will, upon sensing low pressure, cause the valve to close, thus isolating the pipe segment. Pipeline pressure is monitored through the OCC.

NGTL has stated that emergency response will be conducted within the parameters of TransCanada's emergency management program and related operating procedures. The emergency management program is consistent with the spirit of the Board's direction to all its regulated companies, provided by letter dated 24 April 2002 relating to security and emergency preparedness and response programs and complies with CSA Z731 (Emergency Preparedness and Response). The emergency management program is documented in a manual that has been previously submitted to the Board.

NGTL has stated that for the operations phase, NGTL will meet the Board's expectations for emergency preparedness and response by implementing TransCanada's emergency management program, which governs all aspects of preparedness and response.

NGTL has stated that the Project facilities will be incorporated into TransCanada's emergency management system and any related operating procedures. TransCanada is accountable for emergency management for the NGTL System.

NGTL has stated that once the pipeline has been commissioned and turned over to operations, TransCanada's emergency management system will be used to manage all emergency events associated with this line. The emergency management system, when activated, will establish an incident command post at site, supported by a regional Emergency Operations Centre (EOC) local to the area and a corporate emergency operation centre in Calgary. TransCanada uses the Incident Command System and will address the event in a unified command approach with local emergency services.

NGTL has stated that during construction, the prime contractor will have overall responsibility for health and safety at the worksite. This includes:

- protecting the general public and the employees of NGTL, the prime contractor, subcontractors, suppliers, any other contractors and visitors;
- protecting and preserving NGTL's property and the property of all third parties on, along, adjacent to or near the site from damage resulting from performance of any work, and exercise suitable precautions necessary to prevent damage thereto;
- developing a site specific safety plan which outlines how the prime contractor will implement, measure and review its Health, Safety and Environment (HSE) processes on site;
- implementing all applicable health and safety laws and regulations including all orders, directives, codes, guidelines, permits, licences and municipal by-laws;
- monitoring activities at the site to ensure that the health and safety system is functioning properly and providing records to verify that the health and safety system is functioning;
- developing a site-specific traffic management plan;
- developing an Emergency Response Plan (ERP); and
- developing a Project-specific safety inspection and audit program in conjunction with NGTL.

NGTL has stated that it will develop a Safety Management Plan (SMP) that provides the prime contractor with a minimum level of awareness of potential construction hazards associated with the Project. Additionally, the SMP outlines key safety guidelines for the prime contractor to consider when developing its site-specific safety plan (SSSP) so that a collaborative commitment to Project safety is achieved.

Views of Participants

No participants expressed concerns with the respect to the emergency response, safety and security.

Views of the Board

In the Board's view, public safety is paramount in the design, construction and operation of the proposed Pipeline. While the Board finds that a pipeline such as the one proposed by NGTL can be built and operated safely, the Board acknowledges that risk cannot be completely eliminated. The Board is of the view that the measures proposed by NGTL to address safety and security are appropriate. The Board imposes **Condition 19(a) (Appendix II)** requiring NGTL to file an Updated Construction Safety Manual for the Project with the Board prior to the commencement of construction.

The Board is of the opinion that both the potential for, and consequences of, an incident such as an accidental gas leak can and must be minimized. The Board is of the view that the measures proposed by NGTL to address emergency preparedness and response are appropriate. The Board imposes **Condition 19(e) (Appendix II)** requiring NGTL to file a Project-specific Emergency Procedures Manual which would be implemented should an emergency occur during construction activities.

Chapter 6

Public Consultation

The Board's Filing Manual sets out its expectations of applicants regarding public consultation. Applicants are expected to undertake an appropriate level of public involvement, commensurate with the setting, nature and magnitude of a Project. The Board considers public involvement to be a fundamental component during each phase in the life cycle of a Project (that is, project design, construction, operation and maintenance, and abandonment) to address potential impacts of that project. This chapter addresses NGTL's public consultation program. NGTL's engagement with Aboriginal groups for the Project is discussed in Chapter 7, Aboriginal Matters.

6.1 NGTL's Public Consultation Program

6.1.1 Overview of NGTL's Stakeholder Engagement

Views of NGTL

NGTL stated that it uses its Stakeholder Engagement Program to ensure stakeholders are aware of NGTL's project plans and have an opportunity to provide input into those plans. NGTL indicated that it identified those stakeholders most likely to be directly or indirectly affected by or have a potential interest in the Project in advance of engagement. According to NGTL, the overriding principle of NGTL's stakeholder engagement program is that stakeholders will be engaged in a fair, honest, open, consistent and timely manner by NGTL representatives and that they will have the opportunity to provide input into NGTL's project planning.

NGTL stated the purpose and goals of the stakeholder engagement program for this Project are to:

- formally introduce the Project to key stakeholders;
- actively seek and consider comments on:
  - pipeline routing and facility site selection;
  - potential environmental and socio-economic effects;
  - mitigation measures, where necessary, to address potential adverse Project effects; and
  - enhancement measures, where necessary, to improve potential positive socio-economic effects;
- identify and respond to stakeholder or public issues and concerns prior to the filing of the Application;
- provide stakeholders with ongoing Project updates, including communication about the proposed Project and the anticipated regulatory schedule and planned application to the Board;

- ensure, where practical and reasonable, that stakeholder concerns or issues, if any, were incorporated into Project planning;
- communicate changes to the Project, if any, to concerned stakeholders; and
- facilitate ongoing communications that continue through the construction and operations phases to ensure future stakeholder concerns and issues, if any, are addressed appropriately and in a timely manner.

NGTL's Stakeholder Engagement Program consists of the following phases:

1. Stakeholder Identification and Material Development, which focused on the identification of potentially interested and affected stakeholders in the Project area and the development of high level stakeholder engagement materials.
2. Stakeholder Notification and Engagement, which involved providing information on the proposed Project and how stakeholders could provide input into Project planning and the Board's regulatory review process.
3. Ongoing Stakeholder Engagement and Regulatory Filings, to provide Project updates, solicit input and address and resolve issues, and advise stakeholders on the Board's regulatory review process for the duration of the hearing.
4. Construction and Operation: through completion of construction of the pipeline and associated facilities NGTL will continue to inform stakeholders of the Board's decision and advise of any pre-construction and construction activities. NGTL will provide Project updates to stakeholders and seek their feedback and respond to inquiries and resolve emerging issues. With the transition to operations, stakeholder engagement activities will be transitioned to TransCanada's Public Awareness Program.

6.1.2 Public Consultation Activities

Views of NGTL

NGTL indicated it used a variety of engagement tools for the Project, including face-to-face meetings, mail-outs of Project information, open houses, and newspaper and radio advertisements. NGTL also stated it provided a Project toll-free telephone number, a website and an e-mail box to provide additional avenues for stakeholders to seek information, ask questions and express concerns.

NGTL began stakeholder notification for the Aitken Creek Section of the Project in May 2011 and in June 2013 for the Kahta Section. NGTL stated it held three public open houses in Fort St. John, Hudson's Hope and Chetwynd in 2013. NGTL also said it met with local authorities and municipalities along the proposed route to provide information regarding the Project, and to understand and address questions and concerns. In response to requests, NGTL made presentations to the following local town councils, chambers of commerce and regional districts during 2013:

- Hudson's Hope;
- Chetwynd;

- Peace River Regional District;
- City of Fort St. John; and
- Fort St. John Chamber of Commerce.

NGTL stated it continues to engage stakeholders through the regulatory review process and committed to making itself available to meet with stakeholders until the completion of construction of the Project. When the Project is in service, NGTL stated that engagement with stakeholders and Aboriginal groups will continue through TransCanada's Public Awareness Program.

NGTL noted that the questions and concerns raised through the open-houses and engagement with communities were related to:

- reclamation and land usage after construction;
- construction right-of-way width;
- frequency and nature of landowner payments;
- process for abandoning pipelines;
- clarification on the regulator for the Project;
- watercourse crossing methods;
- contracting opportunities available through the Project;
- potential effect on community infrastructure; and
- capacity of local communities to review the variety of projects proposed for the area.

NGTL submitted that since 2011, it has discussed the crossing of the Peace River with a number of stakeholders and Aboriginal groups. NGTL indicated that there were no specific concerns regarding the preferred HDD crossing alignment of the Peace River. NGTL stated that broad concerns regarding the Peace River included potential effects to water quality should an HDD not be successful, and the routing within the PMT.

6.1.3 Landowner Consultation

Views of NGTL

As noted above, NGTL stated it commenced landowner consultation for the Aitken Creek Section of the Project in May 2011 to identify and initiate personal contact with landowners and occupants, to provide general information about the Project, and to obtain survey permissions and access to conduct studies.

NGTL stated that in 2013 its representatives and external land agents personally consulted with landowners. NGTL indicated landowners were provided with Project information by mail in July 2013 and September 2013.

During the oral portion of the Hearing, NGTL submitted it had acquired 18 parcels of land out of 30 for the Project. NGTL further submitted that it continues to work with the remaining landowners to complete the outstanding land agreements.

NGTL stated it also identified registered trappers, guide outfitters and range tenure holders as stakeholders potentially affected by the Project. NGTL indicated that it provided all identified land users with Project information in July 2013 and October 2013.

NGTL stated that it identified three potential alignments for the HDD crossing of the Peace River (east, middle, and west). NGTL confirmed that it had selected the west alignment as the preferred location for the HDD crossing of the Peace River. NGTL submitted that it has been in discussions with a private landowner on the route at the north side of the Peace River regarding the change in crossing location as part of land acquisition negotiations. The landowner requested that the route on the north side of the river be closer to an undeveloped road allowance to avoid going through the middle of their cultivated farm land. NGTL stated that by selecting the west alignment, NGTL has been able to remove the majority of the permanent RoW from their cultivated land. NGTL confirmed that the landowner has not expressed any other concerns regarding the preferred HDD crossing location.

NGTL submitted that, following the filing of its Application, several landowners in proximity to the originally proposed location for the Groundbirch Compressor Station at NE-34-78-16-W6M expressed concerns about that location. In response, NGTL stated that it assessed alternative locations and held an open-house in Dawson Creek on 28 January 2014 to receive feedback from potentially affected landowners and local residents on both possible locations.

NGTL stated it selected the applied for location at SW-35-78-16-W6M based on stakeholders' feedback received through ongoing public consultation, the number of stakeholders in proximity to each proposed location, the distance between occupied residences and each proposed location, technical and design considerations, and information from field studies. NGTL submitted that the current proposed site for the Groundbirch Compressor Station best balances all requirements and responds to the diverse interests of potentially affected landowners.

Details on land rights and land acquisition are provided in Chapter 8.

Views of Participants

Ms. Cobbaert appeared at the oral portion of the hearing in Fort St. John as representative of Mr. Brooke, who had standing to participate as an Intervenor. Mr. Brooke and Ms. Cobbaert are owners of the property impacted by the applied-for location for the Groundbirch Compressor Station at SW-35-78-16-W6M. They expressed concerns with NGTL's engagement regarding the station location, specifically, with the process NGTL followed in selecting the applied-for location. They stated that an "Open House" was not a proper venue for taking a survey to be used as a basis for selection of a compressor site. They noted that the purpose of an open house is to provide an opportunity for people that wish to learn about a project to attend and receive information about a project. They also stated that NGTL's invitation to attend the Open House event held on January 28, 2014 did not communicate the intent of the Open House.

Reply of NGTL

NGTL submitted that through in-person meetings with the affected landowners, NGTL continues working to resolve their concerns. NGTL proposed additional measures to address the concerns, including:

- shifting the compressor station southwest by 45 m and 50 m to reduce the visual and noise impact on the property;

- modifying access plans;
- retaining the tree line between the landowner's property and the compressor site; and
- conducting a baseline noise monitoring program on the property.

NGTL stated that its engagement on the Groundbirch Compressor Station location provided a full and fair opportunity for all potentially affected landowners to be heard.

6.1.4 Consultation with Government Stakeholders

Views of NGTL

NGTL stated that it consulted with various regulatory agencies, including those involved in environmental management:

- BC Ministry of Environment (MOE);
- BC Ministry of Forests, Lands and Natural Resource Operations (MFLNRO);
- BC Ministry of Natural Gas Development (MNGD);
- BC Oil and Gas Commission (BCOGC);
- Fisheries and Oceans Canada (DFO);
- Environment Canada (EC); and
- FrontCounter BC.

NGTL stated that it took regulatory agencies' input, issues and concerns into account during field assessments and when preparing the ESA for the Project, including the development of mitigation measures and follow-up programs.

NGTL indicated that in April 2014 MFLNRO identified concerns about the pipeline route passing through the Pine River Dunes within the Septimus 04 Old Growth Management Area (OGMA). Following a request from MFLNRO and BCOGC for avoidance of the dune features, NGTL stated it has developed a plan relying on micro-reroutes and various construction techniques to largely avoid the dune features within the OGMA, and to minimize and mitigate effects where avoidance was not feasible. NGTL committed to continue to work with MFLNRO and BCOGC to refine the plan as necessary to address their concerns.

NGTL confirmed that on 11 September 2014 it provided all parties on the Board's list of participants with a hyperlink to an electronic copy of its Project Update, which described the Pine River Dunes micro-reroute.

NGTL stated that since its meeting with MFLNRO and the BCOGC in August 2014 it developed a reclamation plan specific to the OGMA and discussed this plan with representatives of both agencies. NGTL stated that although MFLNRO and BCOGC preference remains re-routing around the feature entirely, they had indicated that the mitigation and reclamation proposed is appropriate and did not object to the Pine River Dunes Micro-routing and Reclamation Plan proposed by NGTL. NGTL stated that it has committed to MFLNRO to implement the Pine River Dunes Micro-routing and Reclamation Plan.

NGTL met with local authorities and municipalities along the NMML route to provide information regarding the Project and to address their questions and concerns. Specifically, NGTL met with representatives from the following municipalities and other entities: Chetwynd, Dawson Creek, District of Taylor, Hudson's Hope, North Peace Airport Services Ltd., North Peace Economic Development Commission, Peace River Regional District, Pouce Coupe, and the City of Fort St. John.

NGTL indicated that the City of Fort St. John raised concerns related to traffic control management, specifically, about logistical details, estimated traffic, roads that will be used and how the camps will be moved in. NGTL noted that those concerns were outstanding and that additional consultation will be undertaken by NGTL's prime contractor regarding the Traffic Control Management Plan.

Views of the Board

The Board is of the view that the consultation undertaken and proposed by NGTL for the Project is appropriate for the scope and scale of the Project.

The Board notes that the applied-for Groundbirch Compressor Station site location was selected as the result of consideration of interests of several landowners impacted by the Project. The Board also recognizes that Mr. Brooke and Ms. Cobbaert maintain their opposition to the applied-for location for the Groundbirch Compressor Station. The Board encourages NGTL and the affected landowners to discuss the outstanding concerns, and to seek mutually agreeable solutions. The Board notes NGTL's commitment to work with the affected landowners and implement mitigation to avoid or minimize potential impacts on their property, including future development plans. The Board imposes **Conditions 13 and 34 (Appendix II)**, requiring NGTL to file a plan to mitigate the visual impacts of the compressor station access road and the results of post-construction noise monitoring at the Groundbirch Compressor Station.

With respect to the request from MFLNRO and BCOGC to re-route around the Pine River Dunes feature, the Board is satisfied with the mitigation and reclamation plan proposed by NGTL.

Chapter 7

Aboriginal Matters

The Board takes Aboriginal interests and concerns into consideration before it makes any recommendation that could have an impact on those interests. Whenever a Project has the potential to impact the rights or interests of Aboriginal groups, the Board obtains as much evidence as possible in that regard so that it may assess and consider the potential impacts in its recommendation. The Board relies on its Enhanced Aboriginal Engagement (EAE) initiative, as described below, and its hearing process, so that its record is as complete as possible.

Before filing a Project application, applicants are required by the Board's Filing Manual to identify, engage and consult with potentially affected Aboriginal groups. The Board's Filing Manual requires applicants to consult with potentially impacted Aboriginal groups early on in the planning of the Project and report on these activities to the Board. Further, the Filing Manual requires that an application include detailed information on any issues or concerns raised by Aboriginal groups or that are otherwise identified by the applicant.

Aboriginal groups are encouraged to engage with applicants so that their concerns are identified early, considered by the applicant, and potentially resolved before the application is filed. The Board also encourages Aboriginal groups who are directly impacted by a proposed Project, or have information and expertise that could help the Board gain a greater understanding of the Project under consideration to apply to participate in the hearing process. If accepted to participate in the hearing, there are various ways for Aboriginal groups to contribute. These may include providing letters of comment, written evidence, oral testimony by elders and members of Aboriginal groups, conducting cross-examination of the applicant and other participants, and presenting final argument.

The Board understands that Crown consultation is an issue of interest to Aboriginal groups. The Crown has stated that it will rely on the Board's process to the extent possible to meet any duty it may have to consult with Aboriginal groups for this Project.

This Chapter will deal with the Board's Enhanced Aboriginal Engagement Initiative (EAE), the participation of Aboriginal groups in the regulatory process, the engagement of Aboriginal Groups by NGTL, the impacts of the Project on Aboriginal groups and the views of the majority of the Board and the dissenting Member on these matters.

7.1 The NEB's Enhanced Aboriginal Engagement (EAE) Process for the North Montney Project

The Board's EAE process aims to provide proactive contact with Aboriginal groups that may be affected by a proposed Project, and to help Aboriginal groups understand the Board's regulatory process and how to participate in that process. The Board reviews the completeness of the list of potentially affected Aboriginal groups identified in the proponent's Project Description filed with the Major Projects Management Office (MPMO), a Government of Canada organization, and the Board. The Board may suggest to the applicant any necessary revisions. The Board then

sends letters to each potentially impacted Aboriginal group on the revised list, informing them of the Project as well as the Board's regulatory role in respect of the Project, and offers to provide further information on the hearing process. Following issuance of these letters, Board staff follow up, respond to questions or conduct information meetings, where requested.

The Board carried out its EAE activities for the Project between the receipt of Project Description in August 2013 and December 2013. The Board sent letters to 25 potentially affected Aboriginal groups and organizations. The letters discussed the Board's hearing process, its Participant Funding Program (PFP) and included a summary of the Project. No Aboriginal groups requested meetings on the Board's hearing process. The groups that participated in the GH-001-2014 proceeding are listed in Table 7-1.

7.2 Participation of Aboriginal Groups in the Regulatory Process

Seven Aboriginal groups participated as Intervenors in the GH-001-2014 proceeding. Table 7-1 lists the Aboriginal participants and the extent of their participation. Figure 7-1 provides approximate locations of these Intervenors' primary Reserves in relation to the NMML. Figure 2-1 in Chapter 2 of this Report provides a more detailed illustration of the Project features (e.g. meter and compressor stations). Figure 7-1 was based on the sources noted below it and was created for illustrative purposes only.

Table 7-1: Aboriginal Groups that Participated in the GH-001-2014 Proceeding and the Form of their Participation

Aboriginal Group	Intervenor Status	Filed Evidence	Presented Witnesses	Provided Final Argument
Dene Tha' First Nation*	•	•		
Blueberry River First Nations	•	•	•	•
Fort Nelson First Nation	•	•		•
McLeod Lake Indian Band	•			
Prophet River First Nation	•	•	•	•
Saulteau First Nations	•	•	•	•
West Moberly First Nations	•	•	•	•

* On 29 July 2014, Dene Tha' First Nation withdrew from participating in this hearing

Figure 7-1: Aboriginal Intervenors in GH-001-2014 Proceeding

Sources: NGTL Project Application, Project Overview, (A3Q6S5); NGTL Additional Written Evidence, (A3W1J6); NGTL Application, Section 13, Aboriginal Engagement, (A3Q6T9); NGTL Response to SFN IR 6.1, (A3Y0G6); SFN Written Evidence Part 1, PMT-ACCI Map, (A3X1X9); WMFN Written Evidence Part 3, Socio-Economic Study by Askiy Resources, (A3Z0U6).

7.3 Engagement of Aboriginal Groups by NGTL

Views of NGTL

NGTL's goals for its Aboriginal Engagement Program for the Project included involving communities as early as possible and the following:

- determining and considering potential effects on the current use of lands and resources for traditional purposes (Traditional Land Use);
- identifying sites of cultural and historical importance;
- obtaining local and traditional knowledge (TK);
- integrating local and TK information into the planning process;
- identifying potential socio-economic effects and suitable opportunities to enhance benefits for local communities; and
- developing appropriate mitigation to reduce potential adverse effects.

NGTL indicated that it commenced its Aboriginal Engagement process for the Aitken Creek portion of the Project in May 2011 and for the Kahta Section in June 2013.

NGTL stated it initially identified and engaged in Project discussions with 21 Aboriginal groups.

The MPMO subsequently identified one Aboriginal group and the Board identified three groups and organizations that may also have an interest in the Project.

The following 25 Aboriginal groups and organizations were consulted by NGTL for the Project:

1. BC Métis Federation
2. Blueberry River First Nations
3. Dawson Creek Métis Federation
4. Dene Tha' First Nation
5. Doig River First Nation (DRFN)
6. Fort Nelson First Nation (FNFN)
7. Fort Nelson Métis Society
8. Fort St. John Métis Society (FSJMS)
9. Grand Prairie Métis Local
10. Halfway River First Nation (HLRFN)
11. Horse Lake First Nation (HLFN)
12. Kelly Lake Cree Nation (KLCN)
13. Kelly Lake First Nation
14. McLeod Lake Indian Band
15. Kelly Lake Métis Settlement Society (KLMSS)
16. Métis Nation of Alberta
17. Métis Nation of Alberta, Region 6
18. Métis Nation British Columbia (MNBC)
19. Moccasin Flats Métis Society (MFMS)
20. North East Métis Association of BC (NEMA)
21. Prophet River First Nation (PRFN)

22. Red River Métis Society (RRMS)
23. Saulteau First Nations
24. Treaty 8 Tribal Association
25. West Moberly First Nations

NGTL confirmed that Kelly Lake First Nation indicated that it had no ongoing interest in the Project area.

NGTL stated its engagement activities with Aboriginal groups for the Project included:

- providing information packages that included a summary of the Project scope, a map showing the proposed Project area, proposed routes and site locations, and NGTL's contact information;
- face-to face meetings to discuss the information packages, appropriate communication and engagement methods, initial feedback, methods to assess the potential effects of the proposed Project (map review, field visits and participation in engineering), environmental and Traditional Land Use (TLU) studies, contact information and timing for follow-up meetings, potential community investment opportunities, and potential contracting, employment and training opportunities; and
- follow-up meetings to obtain better understanding of interests and issues of the identified Aboriginal communities, if any, and coordinate their participation in Project-related field studies.

Views of Participants

Blueberry River First Nations (BRFN)

BRFN raised concerns regarding NGTL's consultation activities and stated that BRFN Treaty rights have not been accommodated. BRFN also stated that it was not meaningfully consulted by NGTL on routing options for the Kahta Section of the proposed Project.

BRFN also expressed concerns with the limited timeframe provided for consultation on the Kahta Section and the limited route alternatives considered for the Kahta Section in comparison to NGTL's early engagement with BRFN on the Aitken Creek Section and several route options for the Aitken Creek.

Prophet River First Nation (PRFN)

PRFN stated that NGTL mischaracterized its interactions with PRFN with respect to reaching an agreement on capacity funding. PRFN stated that delays in reaching agreement on capacity funding have resulted in PRFN being unable to gather necessary cultural evidence by the NEB's deadline to file intervener evidence.

In its supplemental Traditional Land Use Study (TLUS) submission filed in the hearing, PRFN identified three cultural camps that could be potentially affected by the Project. PRFN stated that it was not given an opportunity by NGTL to substantively engage with the Company to address its concerns about the three culture camps since the issue was raised in early 2014.

Saulteau First Nations (SFN)

SFN submitted that the regulatory timelines set out for the public hearing process for the Project are insufficient to permit meaningful consultation and participation in the hearing process.

Reply by NGTL

NGTL stated that its Aboriginal engagement for the Project has been extensive. NGTL submitted that each of the groups was provided with comprehensive information about the Project, opportunities to meet with NGTL to discuss and express any concerns about the Project, and opportunities to provide input into Project planning through Project-related field studies. NGTL further submitted that it engaged with each interested community to determine how that community preferred to contribute to the Project. NGTL indicated that communities were given opportunities to conduct a TLU study either facilitated by NGTL's environmental consultant TERA, or to conduct community-led studies for the Project. NGTL also indicated that it provided funding for Aboriginal groups to hire third party experts to review the Project Application and routing options for the Project. NGTL noted that 363 Aboriginal participants were involved in biophysical and archeological field studies.

With respect to consultation related to the three cultural camps identified by PRFN, NGTL stated that it provided opportunities for the community to identify the areas of concern through engagement, ground reconnaissance, including TLU studies, site visits, a fly over and PRFN's participation in field studies. NGTL further stated that it does not believe that the currently proposed pipeline route crosses the three cultural camps as described in PRFN Errata Report and therefore, no direct Project-related effects on these are anticipated.

NGTL submitted that it offered a meeting with PRFN to discuss these sites and any potential appropriate mitigation measures.

NGTL maintained that with the level of detail provided by PRFN in its Errata report, the existing mitigation outlined in the Project Environmental Protection Plan (EPP) is sufficient to address the concerns raised. NGTL submitted that it will consider additional, more site-specific information, should PRFN bring it forward.

In response to BRFN's concerns about the Company's consultation, NGTL stated that it commenced its engagement with BRFN in May 2011. NGTL submitted that through consultation on the Project to date, as well as opportunities for BRFN to participate in the Board's hearing process, BRFN has been provided with sufficient opportunity to review the Project and present its views to NGTL and the Board.

NGTL further stated that BRFN was offered funding for a community-led study in 2013, and TLU work has been undertaken by BRFN since fall 2013.

NGTL stated that on the issue of routing for the Project, BRFN had multiple opportunities to provide input to influence the routing process, but BRFN did not engage directly with NGTL on this issue.

7.4 Impacts of the Project on Aboriginal Groups

7.4.1 Incorporation of Traditional Ecological Knowledge (TEK) and Traditional Land Use (TLU) Information

Views of NGTL

As part of its Aboriginal engagement activities, NGTL undertook TEK and TLU studies.

TEK Studies

NGTL stated that all potentially affected Aboriginal communities were invited to provide TEK during the biophysical and heritage resource field studies. NGTL indicated that at the request of some communities, collected information will remain confidential.

Environmental field studies for the Project were initiated during fall of 2011 and further studies were conducted during the spring, summer and fall of 2012 and 2013.

NGTL stated that TEK was gathered and recorded in 2011 and 2012 with members of Halfway River First Nation, Blueberry River First Nations, Doig River First Nation, McLeod Lake Indian Band, North East Métis Association, and Kelly Lake Cree Nation during the archaeology, aquatics, vegetation, wetlands and wildlife biophysical field studies.

NGTL indicated that during field surveys in the of fall 2011 and winter 2012, TEK participants asked that bear dens, erosion on hills, natural springs, old growth areas, mineral licks and raptor nests be avoided during construction of the Project. Field studies participants also recommended follow-up investigation at specific sites, further discussion of the Kobes Creek crossing, and measures including:

- leak prevention strategies;
- proper matting of swamp areas;
- protecting of key wildlife habitat;
- avoiding the Graham Caribou Range;
- proper waste clean-up;
- re-vegetation;
- weed management (e.g., use of herbicides);
- access management;
- safety and emergency response;
- medicinal plants and harvesting; and
- hiring of community members to monitor construction.

NGTL stated that further TEK was compiled during the 2013 aquatics, archaeology, vegetation, wetlands and wildlife studies with the participation of the following groups:

- Blueberry River First Nations
- Dene Tha' First Nation
- Doig River First Nation
- Fort Nelson First Nation
- Halfway River First Nation

- Horse Lake First Nation
- Kelly Lake Cree Nation
- Kelly Lake Métis Settlement Society
- Métis Nation British Columbia
- McLeod Lake Indian Band
- North East Métis Association
- Prophet River First Nation
- Saulteau First Nations
- West Moberly First Nations

NGTL indicated that the TEK report for 2013 field studies provided information for all components of the Project, including the Aitken Creek and Kahta pipeline sections, and meter and compressor stations.

NGTL submitted that the current routing of the Project avoids all identified Culturally Modified Trees (CMT) sites identified along the proposed Kahta and Aitken Creek sections. NGTL further submitted that if historical or paleontological features not previously identified are found on the RoW or Project facility sites during construction, NGTL will follow its Heritage Resource Discovery Contingency Plan contained in the EPP.

Aboriginal communities were invited to participate in supplemental biophysical field studies, which focused on routing revisions, from January to June 2014. A TEK report was prepared to address additional information collected from participating Aboriginal communities during the aquatics winter surveys, heritage resources surveys, CMT scouting, archaeology surveys, and supplemental wetlands, wildlife and vegetation surveys.

NGTL confirmed that the issues and concerns identified by participating communities during June to August 2014 aquatics and archaeology studies were communicated to NGTL and were considered in Project planning. The Company stated information gathered during field studies after 31 August 2014 will be considered for incorporation into Project planning, including the EPP and the Environmental Alignment Sheets, as appropriate.

TLU Studies

NGTL indicated the following 14 Aboriginal groups elected to participate in a TLU study, either facilitated by TERA Environmental Consulting, or community-led:

- Blueberry River First Nations
- Dene Tha' First Nation
- Doig River First Nation
- Halfway River First Nation
- Horse Lake First Nation
- Kelly Lake Cree Nation
- Métis Nation British Columbia (on behalf of Fort St. John Métis Society, North East Métis Association and Moccasin Flats Métis Society)
- McLeod Lake Indian Band
- Prophet River First Nation
- Saulteau First Nations

- West Moberly First Nations

In its application, NGTL indicated that 11 Aboriginal groups elected not to participate in TLU studies.

NGTL submitted that for the purposes of identifying potential Project effects on the current use of lands and resources for traditional purposes, the Company relied on best available information, including Project specific information provided directly by Aboriginal communities, as well as publicly available reports and NGTL's operating experience. NGTL submitted that where Aboriginal community Project specific TLU information was not available, the TLU assessment assumed that lands and resources in the Regional Study Area (RSA) are currently used by these Aboriginal groups in a manner that is consistent with the traditional activities and resources identified for other Aboriginal groups assessed in its ESA.

According to NGTL, the main concerns that were raised regarding the Project's potential effects on traditional land and resource use were:

- change or loss of culturally significant plant-harvesting areas as a result of Project activities or introduction of non-native species;
- loss of hunting and trapping areas because of land loss, increased noise and activity levels, and changes to wildlife habitat and movement patterns;
- change or loss of aquatic habitat that affects fishing;
- disturbance of occupation sites (cabins, campsites, community gathering, and social, ceremonial or burial sites); and
- disruption of trails and travel-ways (including navigation).

NGTL stated that the RRMS expressed concern that its community was not offered an opportunity to conduct a Traditional Land Use study for the Project.

During the Oral Portion of the Hearing, NGTL confirmed that it met with RRMS in August 2014, and that it was no longer concerned about having an opportunity to do a TLU study for the Project.

NGTL confirmed that community-led TLU study work is ongoing and is scheduled for completion prior to construction of the Project. Information gathered during ongoing TLU studies and engagement will be considered for incorporation into Project planning, including the Project EPP and the Environmental Alignment Sheets.

NGTL committed to implement an Aboriginal monitoring program, and provided the Board with a description of its proposed Aboriginal Monitoring Program for the Project.

Views of Participants

BRFN, FNFN, PRFN, SFN and WMFN raised concerns related to opportunities for Project input, potential Project-related effects on traditional land and resource use, field research methods and data collection protocols.

Blueberry River First Nations (BRFN)

BRFN stated that an accurate assessment of the impacts of the proposed Project on BRFN treaty rights and interests had not been conducted by NGTL and cannot occur without a Project-specific traditional land use (TLU) study and a fulsome cumulative effects assessment.

BRFN submitted that the lands impacted by the Project have always been of vital importance to it, but as a result of extensive development in its territory, the lands are now more important than ever to it. BRFN identified three areas of high importance to the practice of its treaty rights that are intersected by the proposed Project: the area northwest of Beryl Prairie, the Pink Mountain area, and the area north of Wonowon. During the oral portion of the hearing BRFN stated that its members now have to travel north and to the west to get away from industrial activity to hunt safely and that there is hardly any game in that area.

Fort Nelson First Nation (FNFN)

FNFN expressed concerns about the impacts of the proposed Project on Aboriginal interests, including treaty rights. FNFN also raised concerns about direct and induced impacts of the Project on its lands. In FNFN's view, cumulative effects of the Project will cause adverse effects on FNFN lands, wildlife and other resources.

Prophet River First Nation (PRFN)

PRFN stated NGTL's preferred route for the proposed North Montney Project, including the Kahta and Aitken Sections, is located in Treaty 8 territory and the area where PRFN exercises its cultural traditions, customs, and practices. The proposed North Montney Project has the potential to further degrade the cultural values that are already significantly impacted and, therefore, increase the potential for the loss of Aboriginal culture to occur over time.

PRFN expressed concerns that the Kahta Section re-route is located immediately adjacent to and/or possibly intersects with approximately three cultural camp sites, which are used as base-camps for the South-Sikanni Culture Camp. PRFN stated that culture camps have been integral to the mode of life for PRFN, including activities in and around the Sikanni Chief River.

Saulteau First Nations (SFN)

SFN stated that NGTL's methods and data applied for the Project effects analysis do not allow for an informed decision about future cumulative effects in the region.

West Moberly First Nations (WMFN)

WMFN stated that a number of traditional land use resources, areas and activities are likely to be impacted by the proposed North Montney Project. During the oral hearing, WMFN submitted that increased industrialization has gradually encroached on WMFN's territory, severely limiting its ability to engage in traditional practices in those areas. WMFN stated that "there are places where we can't go anymore, simply because there is too much development happening" and that "fragmentation of the land is drastic". WMFN expressed concerns about the methodology that was employed by NGTL and its consultant TERA in collecting TEK for the Project, suggesting that the research approaches were not adequate and that, as a result, the conclusions of the ESA are not credible.

Reply by NGTL

NGTL stated it believes the ESA addresses the potential interactions identified by WMFN through the assessment of the likely effects of the Project on the environment and traditional land and resource use. After reviewing the findings of the initial WMFN TLU results in the context of the ESA, NGTL stated it determined that the significance conclusions of the ESA with regard to traditional land and resource use (TLRU) remain unchanged.

NGTL submitted that the Company and TERA have been working together with the participating Aboriginal communities for several years. Numerous discussions have occurred with regards to cultural protocols, objectives of participation on the biophysical field studies and sharing and collection of TEK, which have been amended and adjusted over the years to ensure a "free, informed and ongoing process" that meets the Canadian ethical research standards.

In response to BRFN, NGTL stated its assessment of potential effects on traditional land use and resources are fully considered in NGTL's recommended mitigation measures, contingency and management plans outlined in the Application.

In reply to PRFN, NGTL stated that the ESA addresses the potential interactions identified by PRFN. NGTL has reviewed the findings of the initial PRFN TLU study and has determined that the significance conclusions of the ESA with regard to traditional land and resource use remain unchanged.

With regards to the three cultural camps identified by PRFN, NGTL stated that, based on engagement and ground reconnaissance, NGTL does not believe that the currently proposed pipeline route crosses the three PRFN's cultural camp sites. NGTL further stated that these concerns have already been addressed by the mitigation measures NGTL has proposed for the Project and in the event TLU sites are identified during ongoing engagement and/or construction, the Company will implement its TLU Sites Discovery Contingency Plan.

In response to SFN, NGTL stated that the approach taken for NGTL's assessment of cumulative effects is scientifically defensible, consistent with Canadian Environmental Assessment Agency guidance, currently accepted practice, and past practice on similar projects, and therefore provides an informed assessment and characterization of potential adverse environmental effects of the Project.

NGTL submitted that it will continue to engage with potentially affected Aboriginal communities through construction and operation of the Project and will continue to evaluate whether additional mitigation measures are necessary to reduce or avoid effects on TLU.

7.4.2 Route Selection

Views of NGTL

The proposed Project requires two sections: the Aitken Creek Section (approximately 182 km) and the Kahta Section (approximately 119 km).

NGTL assessed a variety of routing alternatives by examining a number of route selection criteria, undertaking a preliminary constructability assessment and considering feedback from engagement with Aboriginal communities and government agencies.

Aitken Creek Section

According to NGTL, six major alternative corridors for the Aitken Creek Section were considered by the Company.

Alternative Routes

According to NGTL, in determining the preferred route for the Project, it considered the following routes: Cypress Route, Owl Lake Route, Tylor Route, Chetwynd Route and, the East and West Options (see Figure 7-2).

Cypress Route

NGTL stated it initially preferred the Cypress route option, which followed an existing electrical power line south of the Peace River, had the least amount of new RoW and crossed the Peace River at the most technically favorable location. NGTL noted that this corridor traversed lands of cultural significance to Aboriginal communities, known as the PMT and that in consideration of feedback provided by Aboriginal communities, including SFN and WMFN, the Cypress route was eliminated.

Owl Lake Route

NGTL stated the Owl Lake route option was the most direct from the Aitken Creek area to the existing NGTL System. However, NGTL determined this alternative diverged away from important North Montney producing areas and the future Prince Rupert Gas Transmission (PRGT) interconnect, and therefore would have required building an additional north to south section to connect additional customers, significantly increasing the overall length. NGTL further stated that by connecting to the existing NGTL System at this location, this alternative would have also required significant downstream facilities to be built to accommodate the connection. This route also traversed a significant portion of boreal caribou range and was rejected by NGTL.

Taylor Route

NGTL stated the Taylor route option followed a portion of an existing pipeline corridor from the Aitken Creek area to NGTL's existing Gordondale pipeline in Alberta. NGTL stated that in comparison to its final proposed route, the length of this option would have been significantly longer, would require a significant southern section to connect to producing lands south of the Aitken Creek area and to the future PRGT interconnect. NGTL also stated that this option diverged from the North Montney producing areas and would require building significant additional facilities to reach the areas of development and customer connection points, which would significantly increase the footprint of the Project. It was determined that a southern corridor would be more beneficial for customers as there is significant future potential for a number of additional producers developing supply in those areas south of Aitken Creek and the future production potential of the areas south of Aitken Creek has been demonstrated through several recent requests for service in these areas.

Chetwynd Route

NGTL stated that the Chetwynd route option was the second longest of the routes considered, with challenging terrain and watercourse crossings, and bypassing highly prospective North Montney lands.

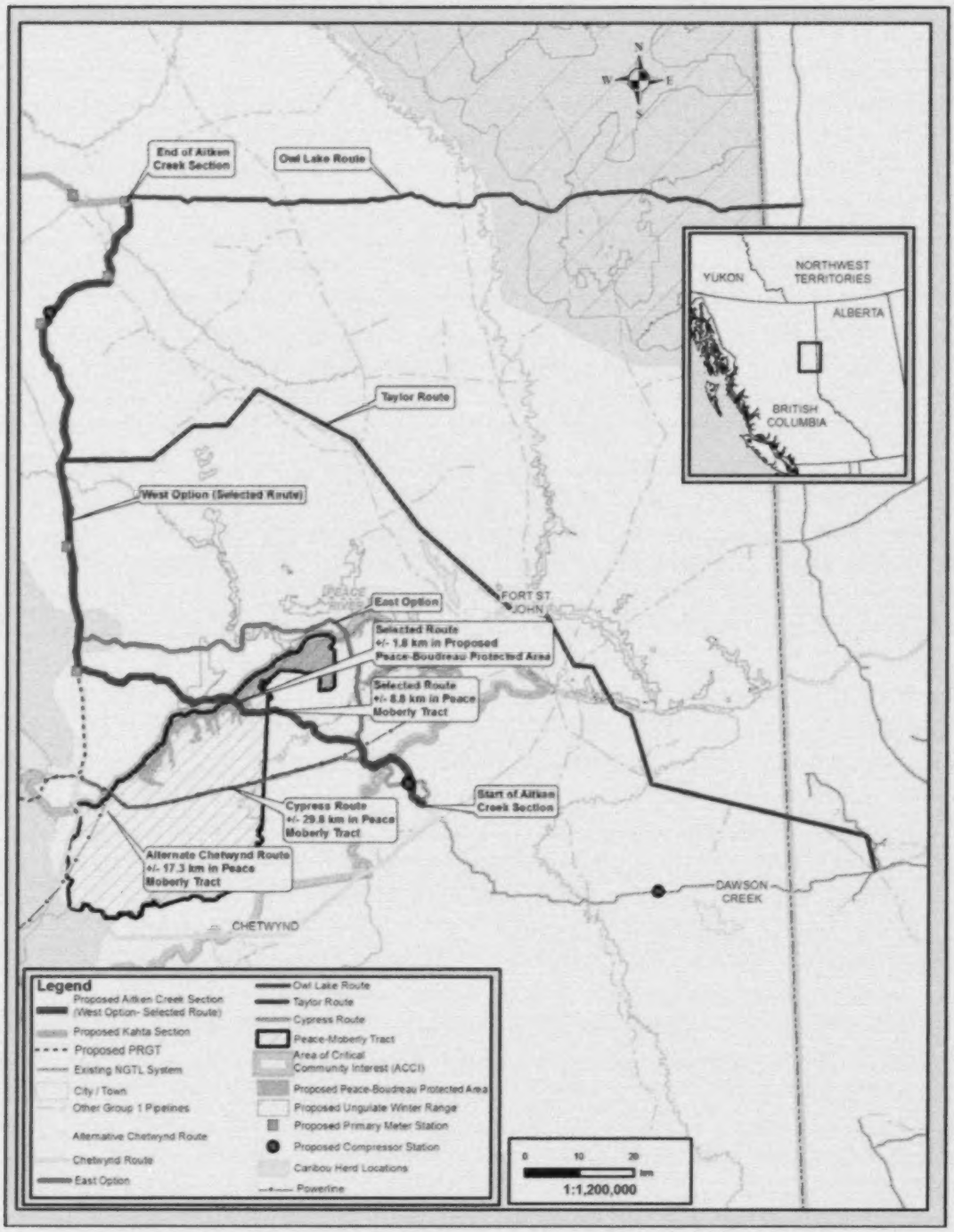
NGTL noted that this route was not considered a preferred route at any time during the planning process, as it would have resulted in an increased environmental footprint (including in the PMT and Area of Critical Community Interest (ACCI)), additional requirements to flow the gas through the added length of pipe (thereby increasing Project air emissions), additional footprint within caribou range, and significantly higher construction and operating costs.

East and West Options

NGTL stated the final two route alternatives considered were the East and West options. NGTL stated the East option was initially preferred from the perspective of minimizing impact to culturally sensitive lands and the proposed Peace Boudreau Protected Area, and potential technically feasibility. NGTL submitted that the completion of boreholes and feasibility studies presented a very low probability for a successful crossing of the Peace River at this location. NGTL confirmed that it communicated to Aboriginal communities and stakeholders that the West route would be pursued for the Project, as it best balanced feedback from Aboriginal communities, technical feasibility, environmental impacts and commercial needs.

NGTL stated it has spent roughly four years evaluating routing options across the Peace River and believes that the proposed West option route is feasible and the most appropriate route for the Project because it minimizes impacts on the PMT and the overall length and footprint of the Project (including the footprint within caribou range) and meets the requirements of the Project.

Figure 7-2: Alternative Route Options Considered by NGTL for the Aitken Creek Section



Source: NGTL North Montney Project Update and Errata, (A3V1T0).

Kahta Section

NGTL stated the route for the Kahta Section was influenced by the primary control points and existing and future customer plans that would potentially tie into the North Montney Mainline (NMML). NGTL submitted that the route for the Kahta Section was selected by focusing on following existing linear features where possible, reducing the amount of new land disturbance, and minimizing freehold land along the route.

NGTL stated two changes to the Project affected the final proposed route for the Kahta Section: an adjusted end point and a new location for crossing the Sikanni Chief River.

Views of the Participants

Aitken Creek Section

Views of WMFN

WMFN stated that it will not support the route through the PMT because of the significant adverse effects it would have on one of the most sacred, hunting and gathering areas for WFMN members. WMFN expressed concerns about the proposed route of the pipeline in proximity to the community where its members use the land intensively within the ACCI, the Farrell Creek and Kobes Creek areas.

WMFN stated that crossing the PMT is an infringement that has the potential to seriously impact the exercise of its Treaty rights, and that NGTL has known since early in the consultation process any route which crosses the PMT is unacceptable.

WMFN further stated that the PMT is now one of the only pristine areas it has left to meaningfully exercise its Treaty rights. WMFN stated during oral traditional evidence that "we don't want development in there because it's the last pristine place in close proximity to home because we are people of the land. We always have been and we always will be."

WMFN also raised concerns during oral traditional evidence about the impacts a route through the PMT would have on its use of traditional resources through increased access, and on its culture and way of life. WMFN stated a route through the PMT "creates an access where things have -- or animals have a good chance of being killed off by hunters…they have free access with any corridor that is opened. The predators have found easier ways to chase their prey down. They have better access also." WMFN also stated that "we just get to sit here and watch the caribou disappear and our way of life, you know. We fight hard for the caribou because the caribou represent us. We are disappearing as a culture, as a people. We need land, we need large tracts of land to maintain our way of life. We don't have that."

WMFN also raised concerns about the degree of consideration given to the alternative routes for the Project. WMFN stated in oral evidence that "We haven't spent any time discussing any of the Eastern options. We've just been told that it's unfeasible. We don't know why it's unfeasible. We heard the crossings on the Peace River might be, but we've also heard from other people that the crossing on the Peace River is not an issue."

In its technical review of the Project, WMFN submitted that the Taylor Route option provides several advantages for minimizing effects to the biophysical and social environments, including:

- no kilometres through threatened caribou herd ranges;

- no kilometres through the PMT;
- no kilometres through the ACCI;
- no kilometres through the proposed Peace River-Boudreau Protected Area; and
- fewer kilometres through OGMAs.

WMFN also stated that despite having more water course crossings overall, the Taylor Route option avoids several major water course crossings including the Cameron River, Pine River, the Moberly River, Farrell Creek, Kobes Creek and the Halfway River. WMFN stated the Taylor Route appears likely to result in less overall effects to the environment compared to the Aitken Creek option, and recommended further assessment of the economic, technical, and environmental feasibility of the Taylor Route.

WMFN also submitted an independent assessment of the feasibility of crossing the Peace River by trenchless methods. This assessment presented opinions regarding a trenchless crossing of the Peace River for the West and East route alternatives. The report stated that there may be trenchless alternatives such as HDD, microtunneling, or Direct Pipe alignments located to the west of the East Option which presents less risk from the standpoint of length, elevation difference, or subsurface conditions. The assessment concluded that NGTL considered alternative crossing locations for the Peace River crossing of the East route relative only to HDD, and not microtunneling or the Direct Pipe method, and that additional details of these locations would be required to determine if a more viable crossing location for the East Option is available.

WMFN recommended specific terms and conditions if the Project is approved. These included:

- that NGTL shall not, at any time during the life of the Project, accept gas receipts from wells located within, or through pipelines passing through, the PMT or the ACCI;
- that NGTL shall continue to engage with WMFN regarding the feasibility of alternative routes avoiding the PMT; and
- that NGTL shall explore and fully evaluate potential Peace River crossing locations for the East Route and the Taylor Route.

WMFN also requested that the Board recommend that the Province set aside the hunting, fishing, and trapping rights in the PMT for people holding section 35 rights under the *Constitution Act, 1982*, and that the Province and affected First Nations enter discussions on the ACCI with a view to the harmonious accommodation of all interests in this land.

Views of SFN

SFN stated that the proposed route of the Project unnecessarily passes through high value traditional use areas relied upon by SFN members for the exercise of Aboriginal and treaty rights, and that no pipeline route through the middle of the PMT will be supported by SFN.

During oral traditional evidence, SFN raised concerns about the impacts a route through the PMT would have on its ability to utilize lands and resources for traditional purposes, and in particular the negative effects of new linear development. SFN stated that "when industry opens up these oil leases and pipelines and stuff like that and they're going criss-cross in every direction you could think of, moose, wildlife, they're having harder times to find areas to hide,

because they do hide from predators, wolves, grizzlies, especially in the springtime when they have their calves, and so they're running out of places to go." For other resources such as berries, SFN stated "we're really scared to go pick berries anywhere because of herbicide and pesticide spraying. It really destroys a lot of our berry patches. And we don't pick much berries anymore like we used to. It's pretty scarce now even to get any of our food sources out there."

SFN stated the PMT,

> "is one of the last sanctuaries that we have, not only for the Saulteau people, but also for our relatives at the other end of Moberly Lake from the West Moberly First Nations. We've said all along that we don't ask for much. We just ask that sometimes we be left alone in areas that we've identified and feel that are important to us and will sustain us and will continue to sustain us going forward."

SFN also raised concerns about the effects a route through the PMT would have on its ability to maintain its cultural identity. SFN stated that "one thing about our culture and language is that you can't teach it in a classroom. Yes, the basics, you can. But we need that landscape to remain in the current condition that it's in to ensure that our treaty and Aboriginal rights and our right to practice them continue."

SFN stated its members have to travel longer distances to find animals, compounding the difficulty for many members to hunt and provide food for their families on a regular basis. In addition to being increasingly difficult to find moose and other wildlife in areas that were once abundant, SFN stated its members report that once they successfully hunt, the quality of meat is compromised, as the animals appear to be unhealthy.

SFN provided a technical and economic analysis of aspects of the Chetwynd route, that does not (or crosses in a very minor way) the PMT and Peace Boudreau Protected Area. SFN stated that NGTL did not use quantitative criteria to assess the feasibility of the six route alternatives, but rather numerous qualitative criteria, which attempt to balance the Project footprint, impacts to Aboriginal communities, landowners, land users, the environment, while maintaining an economically prudent and technically feasible Project. SFN argued that the lower cost and reduced environmental impact of the Chetwynd option may be complicated by different ownership structures of the various pipelines that converge on the SFN/PMT area, however the significant financial and environmental benefits, which the Chetwynd route appears to have, would seem to justify revisiting the Project's final proposed routing.

SFN stated its position since 2008 has been that SFN is against any pipeline going through the PMT. SFN stated that despite consistent expression of SFN's concerns relating to the PMT, and the financial and technical capacity of NGTL to develop alternatives, NGTL has chosen the lowest cost option and opted to propose a pipeline that cuts directly through the PMT. SFN also stated that NGTL has not adequately investigated the alternative means of achieving the objectives of the Project. SFN submitted that the proposed route of NGTL is not optimal. SFN submitted that in the absence of reliable and objectively verifiable evidence to support NGTL's assessment of the challenges of the route, it is not appropriate to dismiss the Chetwynd route as a feasible option for the Project.

Kahta Section

Views of BRFN

BRFN stated that it has concerns with the appropriateness of the Project route, and stated that completion of a TLU Study (TLUS) is an essential step in determining the location of BRFN site-specific uses and revising the Project accordingly. BFRN stated that the Project route is not appropriate until these important steps occur. BRFN recommended that the proposed Project route be re-evaluated because the selection of the proposed Project route must necessarily follow the completion of a BRFN Project–specific TLUS.

BRFN stated it was not meaningfully consulted by NGTL on routing options for the Kahta Section of the proposed Project, which runs through the core of BRFN territory and the areas of heightened importance due to BRFN reliance on these areas for the continued meaningful practice of its treaty rights. BRFN also stated that, in its response to IR 2.19 from the NEB, NGTL identified a number of route alternatives for the Kahta Section. BRFN argued these route alternatives were not put forward for BRFN's consideration.

Reply of NGTL

In response to the concerns of BRFN, WMFN and SFN regarding NGTL's evaluation of alternative routes and impacts of the preferred route on their traditional land uses, and SFN's submission on a possible alternative route for the Project, NGTL stated that it is not supportive of a revision of its preferred route, and is of the view that the current Project route is appropriate based on the balancing of route selection criteria. NGTL has committed to continue engagement with SFN and WMFN to determine if it has appropriately mitigated their concerns. NGTL stated it has made numerous requests for a meeting to discuss its access control plans, which may include measures to prevent new access into the ACCI and PMT, and that the Company remains committed to working with SFN to discuss its concerns regarding access management. NGTL submitted that it had discussions with BC FLNRO with respect to the PMT, the area of concern to SFN and WMFN. NGTL filed correspondence in which the Province of BC indicated that it supports the proposed route as it crosses a smaller portion of the area than other possible routes.

In response to BRFN's statement that the proposed Project transects areas of heightened importance to BRFN, including the area north of Wonowon, the Dancing Grounds, Pink Mountain and Sikanni Chief, NGTL submitted that the evidence provided by BRFN with respect to these areas was not ground-truthed for the purposes of this Project. NGTL further stated that during the oral proceeding, BRFN witnesses indicated on the map that the location of the Pink Mountain ranch is approximately 5 km west of the proposed Project.

NGTL stated that it consulted with engineering firms and two horizontal directional drilling (HDD) and Direct Pipe installation contractors as well as the manufacturer of direct pipe equipment. NGTL concluded that HDD, micro tunneling and direct pipe trenchless installation strategies carry a high installation risk and should not be considered for construction of the Peace River crossing. NGTL submitted that it provided the trenchless feasibility evaluation for the Peace River crossing to SFN and WMFN. NGTL confirmed that it also offered to meet with WMFN to address further questions or to provide further explanations of the evaluations.

7.5 Views of the Board on Engagement and Impacts

NGTL's Engagement with Aboriginal Groups

The Board requires applicants to initiate early discussion and consultation with Aboriginal groups potentially affected by a proposed project. This allows for early exchange of information and for matters of concern to be considered at the onset of the project and through the design phase of the project. The extent of the consultation that needs to be carried out is determined to a large extent by the nature, scope, and setting of a project.

The Board expects applicants to design and implement a consultation program for the Project. The Board finds the design of NGTL's engagement program, including its process to identify potentially affected Aboriginal groups, adequate for the nature, scope and setting of the Project. The Board is of the view that all potentially affected Aboriginal groups were provided with sufficient information about the Project, and had opportunity to make their views about the Project known to NGTL and to the Board.

The Board also finds NGTL's implementation of its consultation program adequate. The Board notes NGTL's commitment to continue to engage with potentially affected Aboriginal communities throughout the life of the Project. The Board fully expects NGTL to not only continue to engage with potentially affected Aboriginal groups, but to engage in a process of meaningful discussion to understand any concerns that are brought forward, and to address them to the extent possible.

The Board finds NGTL's consultation with potentially affected Aboriginal groups for the Project satisfactory.

On Project routing and potential effects on Aboriginal traditional uses within the PMT, the members of the Board are not in full agreement. The views of the Board regarding the Project's effects outside the PMT, and the views of the majority of the Board and dissenting views by Member Shane Parrish regarding potential effects within the PMT, are presented below.

Impacts of the Project on Aboriginal Groups

With the exception of the portion of the Project that crosses the PMT, the Board finds NGTL's approach for the assessment of the Project's potential effects on traditional land and resource use generally acceptable. The Board acknowledges BRFN's concerns regarding the amount of TLU information filed with the Board, and notes BRFN's assertion that the completion of a Project-specific TLU study is necessary to determine the impacts of the proposed Project on BRFN traditional land uses, and to determine appropriate mitigation.

The Board acknowledges that collecting and documenting information relating to the traditional use of lands and resources takes time. It also requires a commitment by both the Company and affected Aboriginal groups to a process of dialogue, to exchange information and to be responsive to the information and concerns raised. The Board is of the view that it had sufficient information to adequately assess the potential effects of the Project on the current use of lands and resources for traditional purposes. The Board notes NGTL's commitment to completing any outstanding TLU investigations that would identify additional issues or concerns, and to receiving any additional information that may be brought forward by Aboriginal groups regarding their use of the land and resources in the Project area. The Board imposes **Condition 7, Appendix II** requiring NGTL to file with the Board a report outlining the results of any outstanding TLU investigations for the Project, including how any concerns or issues have been or will be addressed by NGTL.

The Board also notes PRFN's concerns with respect to three cultural camps identified in PRFN's Errata Report. The Board expects NGTL to continue to engage with PRFN to discuss the site-specific details and potential measures to reduce or eliminate potential Project effects related to these cultural camps. The Board imposes **Condition 10 (Appendix II)** requiring NGTL to submit to the Board a report on its consultations with PRFN regarding PRFN's cultural camps.

A number of Aboriginal groups raised concerns about NGTL's cumulative effects assessment. The Board's views and recommendations on environmental and socio-economic matters are provided in Chapter 9.

The Board notes the concerns expressed by a number of Aboriginal groups in this proceeding about the extent of development in the Project area, and the overall effects that previous and continuing development and resource extraction is having on the ability of Aboriginal groups to continue to use the lands and resources for traditional purposes. In its decision in the GH-1-2009 proceeding, the Board noted the concerns raised by Duncan's First Nation about assessment of cumulative effects. In response to those concerns, the Board noted there was:

> [an] evolving and increased awareness and demand for information regarding the assessment and management of cumulative effects, and [the Board] is of the view that it is important for the companies it regulates to be responsive to such interest. The Board considers that it would be desirable to see continuing improvement in cumulative effects assessments that support project applications.

The Board continues to have a desire to see continuing improvement in the assessment of cumulative effects with respect to project applications. The Board acknowledges that development at the regional level in the Project area involves areas of provincial jurisdiction, both for approving development across a number of sectors, as well the regional and provincial land use planning process. The Board encourages the Province of BC to seek continuous improvements to these processes, in response to the evolving demands and interests associated with the assessment and management of cumulative effects.

7.6 Views of the Majority of the Board on Route Selection through the PMT

The majority of the Board recommends approval of NGTL's applied-for route through the PMT. However, for the reasons set out below, the majority of the Board finds that additional measures imposed by the Board are necessary for the route through the PMT to be in the public interest.

Applicants are required to justify their projects to the Board, and to demonstrate that, taking into consideration all technically and economically viable alternatives available, the proposed Project is the most appropriate option to meet the needs that would be satisfied by the Project while serving the public interest. The Board's regard for the public interest refers to a balance of economic, environmental and social considerations. NGTL pursued its preferred route through the PMT over the significant concerns raised by SFN and WMFN. Despite hearing these concerns early on in the review of the Project, NGTL did not substantively revise its Project design or construction, or propose additional measures that would eliminate to the greatest degree possible the Project's potential effects on the use of the lands and resources in the PMT by SFN and WMFN. Neither did NGTL substantively adjust its preferred route through the PMT, or avoid routing through the PMT altogether. In the view of the majority of the Board, NGTL did not sufficiently justify its preferred

route commensurate with the demonstration of concern and the evidence provided by Aboriginal groups about the route's potential impacts.

The majority of the Board finds NGTL's approach unsatisfactory in these circumstances. The Board expects applicants to clearly demonstrate: 1) how the proposed project is the most appropriate option to meet the needs that would be satisfied by the project while serving the public interest; and, 2) how the input and concerns they receive from potentially impacted parties, including potentially affected Aboriginal groups, have influenced the design (including route selection), construction or operation of their project. The majority of the Board finds the concerns raised by SFN and WMFN to be significant and to have merit. The majority of the Board accepts the views of SFN and WMFN that their continued use of the lands and resources within the PMT is of great importance to their communities. This includes use of the PMT as a source of traditional resources, as being vital to the continuity of their language and cultures as part of their on-going activities in the PMT, and as an increasingly important intact landscape within an area of considerable and on-going development. Given the nature and degree of the concerns raised and the evidence submitted by SFN and WMFN questioning the appropriateness of the preferred route through the PMT, the majority of the Board would have expected NGTL to demonstrate justification for its preferred route commensurate with the degree of concerns raised, or demonstrate how it revised its Project to address these concerns to the extent possible.

The majority of the Board therefore finds that additional measures imposed by the Board are necessary to eliminate or minimize to the greatest extent possible the Project's potential effects in the PMT, for the routing of the Project through the PMT to be in the public interest. The majority of the Board is of the view that the Project can be constructed and operated with further technically and economically feasible mitigation to eliminate or minimize to the extent possible the Project's potential effects in the PMT. NGTL provided justification for its proposed mitigation measures, but the Board notes that NGTL did not indicate that this constitutes the fullest extent of measures that could be technically or economically implemented. Where applicants have not sufficiently justified how a project's design, routing and construction methods and techniques are the most appropriate for the circumstances while serving the public interest, the Board will not hesitate to impose conditions to protect the public and the environment.

The majority of the Board therefore imposes conditions that require NGTL to submit to the Board, for approval, a protection plan specific to the PMT that outlines the additional measures that will be implemented to eliminate or minimize to the greatest extent possible the Project's potential effects within the PMT, including potential effects on the traditional use of lands and resources by SFN and WMFN. NGTL would also be required to develop a plan for consulting with SFN and WMFN on the development of these measures to protect the PMT, to report to the Board on its consultation efforts, and to report to the Board on the effectiveness of the measures implemented through monitoring reports during operations. **(Conditions 11, 12 and 35, Appendix II)**

Given the weight that the majority of the Board attaches to these conditions in finding the Project to be in the public interest, its expectations for the fulfillment of these conditions are correspondingly significant. The extent to which the PMT can be protected from the effects of the Project will be determined by:

- the objectives, methods and rationale for the measures contained within the recommended plan;
- evidence of thorough and effective engagement with SFN and WMFN on the development of these measures; and

- the ultimate outcomes that are reported to the Board that can demonstrate that the Project's effects within the PMT have been effectively eliminated to the greatest extent possible.

The Board is of the view that with the imposed **Conditions 11, 12 and 35 in Appendix II**, the Project is in the public interest with NGTL's applied for route through the PMT.

The views of the Board on the Project's overall potential effects on the use of lands and resources for traditional purposes by Aboriginal groups are found in Chapter 9.

7.7 Views of Dissenting Member Parrish on Portion of Project Route

Both the SFN and the WMFN told the Board that they oppose a Project route crossing the PMT, as well as any pipeline going through the PMT, and explained their concerns to the Board. I share their concerns. In my view, NGTL did not provide persuasive evidence that it thoroughly investigated alternatives that would avoid the PMT. Given the extent of approved development in the surrounding area, there are reasonable routes outside of the PMT that should have been chosen. As a result, NGTL has not justified that the route through the PMT is an appropriate route. Consequently, I dissent, in part, from the majority's recommendation that Governor in Council (GIC) approve this Project. For the reasons set out below, my recommendation would be that GIC approve the portion of the Project from Kahta to Mackie Creek, but not the portion of the Project from Mackie Creek to Saturn.

The Board heard extensive evidence that the SFN and WMFN are seeking to have the PMT identified as a protected area due to its special significance to these Treaty 8 First Nations. They have said that they "need that landscape to remain in the current conditions that it's in to ensure that [their] treaty and Aboriginal rights and [their] right to practice them continue." Treaty 8 states, in part, that "...they shall have right to pursue their usual vocations of hunting, trapping and fishing..." The First Nations also provide evidence of the oral promises that were made at the time of Treaty 8, such as that "...the treaty would not lead to any forced interference with their mode of life..."

The PMT is one of the last remaining undisturbed and high value traditional use areas in close proximity to these First Nations. According to the SFN and the WMFN, the PMT is needed to allow the SFN and the WMFN a meaningful opportunity to carry out their traditional ways of life and exercise their treaty rights, from both a bio-physical and spiritual perspective. These First Nations clearly and carefully described to the Board the impact increased development has had on their ability to exercise their rights, including impacts related to the reduced quantity and quality of moose and caribou to hunt, the increased difficulty of finding berries, the need to go further and further afield to hunt, gather, trap, fish or find solitude to carry out their traditional spiritual practices. WMFN indicated that the wide-spread industrial development through its territory has confined them to smaller and smaller areas that remain suitable for traditional use. They argued that the decline in available resources has had an immediate and significant impact on the health and well-being of these First Nations, as well as their culture and identity. They indicated that the loss of areas for hunting outside the regional assessment area has made areas such as the PMT even more important and valuable to the exercise of treaty and Aboriginal rights.

Likewise, SFN said it relies heavily on the PMT for sustenance, cultural, commercial and socio-economic purposes. It argued that the Project will adversely affect the lands relied upon for subsistence harvesting, cultural and spiritual activities, and the exercise of other treaty rights. In addition, the Project will impact SFN's ability to pass these practices on to the younger generation.

One of the SFN Elders emphasized the importance for the First Nations of teaching the younger generation, whom they take out all year long "...so that they know how to live off the land, how to respect the animals, how to respect one another...we had good teachers as our Elders that passed on to us, and that's something we're going to keep on passing on to our...younger generation." In its view, the Project will result in a "direct and avoidable forced interference" with their mode of life. Other First Nations also expressed concerns about the impact of industrial development and its encroachment on their ability to carry out their traditional practices and treaty rights.

I agree with the SFN and the WMFN that there needs to be sufficient land available to allow First Nations a meaningful opportunity to practice their traditional way of life and exercise their treaty rights. Therefore, fragmentation, approval of projects that break up contiguous land, and increased encroachments must be strongly and demonstrably justified. Given the concerns raised by the First Nations, NGTL has not provided adequate justification for a route that crosses the PMT. Based on the evidence before the Board, NGTL identified and explored viable alternatives that may have avoided the PMT, such as alternatives within or parallel to already assessed and approved infrastructure corridors, existing RoWs, roads, railways or power lines in this area. However, NGTL appears to have based its choice primarily on the economics of the routing and customer preference. Based on the evidence, my view is that there are reasonable alternative routes within the surrounding already developed area that are preferable to a route that disturbs the PMT.

As the Board was told in this proceeding, negotiations have been underway with the Province of BC and the two First Nations since 2002 relating to protecting the PMT from the encroaching industrial development in this area. According to the evidence presented in this hearing, negotiations have not concluded. This information was not contradicted by BC, which was an Intervenor in this proceeding, as represented by the Ministry of Natural Gas Development.

I note that NGTL submitted a letter from the Ministry of Forests, Lands and Natural Resources Operations, which purports to speak on behalf of BC. The letter indicates that BC was supportive of a route through the PMT, "as it crosses a smaller portion of the area than other possible routes". This letter does not indicate whether there was any discussion with the two First Nations that, from what was told to the Board, are currently in negotiations about protecting the PMT, or how this position impacts those negotiations. The letter appears to have already come to a conclusion on whether the PMT should be protected, yet SFN indicated that BC has not talked to it about this pipeline. I would expect that parties in discussions would act transparently and in good faith, and that any party involved in ongoing discussions would not act in a way that has the potential to undermine those discussions. BC did not take an active role in these proceedings to explain its position in the letter and how BC's position impacts the ongoing discussions, to hear concerns about this route from the First Nations directly, to express its views on the validity of the concerns raised about the PMT or to hear evidence about the alternatives that would avoid the PMT. As a result of how this letter was presented to the Board, including the absence of an explanation or context from BC, I assign little to no weight to that letter.

The PMT should not be encroached upon lightly. I accept the evidence provided by the SFN and the WMFN on the serious implications of crossing the PMT. In my view, any encroachment permitted by the Board's acceptance of the PMT route has the potential not only to significantly impact the SFN and WMFN's ability to meaningfully undertake their traditional practices and to pass these practices on to the younger generation, but also to undermine negotiations that have been ongoing with the Province of BC. I am not persuaded that NGTL has demonstrated that a route that crosses the PMT is an appropriate route. While it may be the most economical route for NGTL, the

economics of the routing are not my sole consideration, and when considering the PMT, the economics do not take precedence over other considerations. The PMT is an area of special significance to these First Nations, and there is sufficient evidence presented on the record of this Hearing for me to determine that the PMT should not be disturbed for the purpose of this Project – there are other alternatives. Disturbance of the PMT should be a last resort, not the first.

If a project is otherwise found to be in the present and future convenience and necessity, in some cases potential impacts of the nature contemplated here may be found to be justified, such that the project should be approved. As the Board has stated in past decisions, "As a federal tribunal, the Board must focus on the overall Canadian, or national, public interest. Various decisions of the courts have established that a specific individual's or locale's interest is to be weighed against the greater public interest, and if something is in the greater public interest, the specific interests must give way."[11] However, this statement assumes that there is sufficient investigation of the various options to accomplish the objective, and that this evidence is put before the decision-maker to consider when looking at options to fulfill the objective. The totality of evidence in this proceeding has not persuaded me that NGTL has adequately investigated other options that would achieve the same objective without potentially causing the impacts in the PMT. Considering the extent of development outside of the PMT, it stretches credibility to suggest that a route through the PMT is preferable to routes in already disturbed areas outside the PMT. There are other route options available.

The concerns related to the PMT were raised with NGTL very early in the Project development phase and consistently repeated. In my view, there are likely to be significant adverse impacts to the current Aboriginal use of land and resources for traditional purposes in the PMT if this portion of the Project is approved. As set out in my CEAA, 2012 evaluation of significance for section 9.5.4.6 in Chapter 9, my view is that these adverse impacts, particularly as they may affect the exercise of traditional practices and corresponding effects on cultural continuity, are likely to be continuous, long-term, irreversible, and moderate in magnitude. Within the PMT, the impacts extend over the Regional Assessment Area. NGTL identified alternatives routes in this hearing, but has not adequately investigated, through discussions with the SFN and the WMFN, or through the evidence on the record of this proceeding, the viability of the alternative routes. Given the importance and high value of the PMT to the SFN and the WMFN and the exercise of their treaty and Aboriginal rights, the weight I attribute to the adverse impacts of this portion of the route, and my view that there are other route options. In my view, there are likely to be significant adverse environmental effects within the PMT and these effects are not justified in the circumstances.

The conditions proposed by the majority will assist in mitigating impacts to the PMT; however, the conditions do not avoid fragmentation of the PMT, inducement of increased encroachment in the PMT, and the loss of contiguous land. I cannot consider mitigations of impacts when options to avoid these impacts exist.

Apart from my concerns about this portion of the route and the weight I attribute to the adverse impacts associated with traversing the PMT, I concur with the majority of the Board on all other matters related to this Project, including the appropriateness of the Project routing from Kahta to Mackie Creek. However, based on the evidence on the record before the Board, I cannot conclude that the portion of the Project route crossing the PMT, the Mackie Creek to Saturn portion, is an appropriate route.

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[11] NEB Reasons for Decision EH-1-2000 dated March 2004, Sumas Energy 2, Inc. at p. 9, (A0J8V7).

Since the alternatives that would have avoided the PMT were not fully assessed under CEAA, 2012 and the NEB Act on the record of this hearing, I am not able to recommend approval of any particular alternative in lieu of the one proposed, or impose a condition for NGTL to use one of those alternatives. Consequently, I have no choice but to dissent, in part, from the recommendation of the majority under Part III of the NEB Act.

My recommendation to GIC would be that it:

1) approve the Kahta to Mackie Creek portion of the Project, and
2) deny the Mackie Creek to Saturn portion of the Project.

A denial on the Mackie Creek to Saturn portion could provide the time necessary for NGTL to investigate alternative routes more fully, and apply for a project with an amended route (outside the PMT) that could traverse already disturbed areas, and that either parallels or is within existing or approved infrastructure corridors, RoWs, roads, railways or power lines.

Alternatively, GIC could, prior to making its decision, ask the Board to reconsider its recommendation related to approval of that portion of the Project from Mackie Creek to Saturn. In doing so, it could establish a time limit long enough to allow the Board to, if necessary, solicit additional information about alternative routes outside the PMT, in order for the Board to reconsider its recommendation about the appropriateness of the Project route. This could result in a project that is both supported at a local level and is in the greater Canadian public interest.

If GIC approves the Project and a Certificate is issued, I expect NGTL to continue to discuss with SFN and WMFN whether there are any additional measures that could be taken to avoid adverse impacts on the PMT, even if those measures require amendments to the Project routing. If there are delays in the Project, I strongly encourage NGTL to further investigate the alternatives to the portion of the route that crosses the PMT and apply for amendments to the routing. To obtain more certainty for all parties involved moving forward, as well as other parties interested in this area of BC, I also recommend BC, SFN and WMFN commit to expedited timelines for the conclusion of negotiations about the protection of the PMT.

As a corollary to my dissent on the recommendation for a Certificate under section 52, I also must dissent in part on NGTL's request for an exemption order for the Section 58 Facilities. To the extent that temporary infrastructure falls within the Mackie Creek to Saturn portion of the Project, I dissent from the majority's decision to grant an exemption Order for those Facilities. My view is that the Board should not make any decision that has the effect of authorizing the construction and operation of the pipeline or any related works or facilities, temporary or otherwise, within the Mackie Creek to Saturn portion of the Aitken Creek Section of the Project.

Chapter 8

Land Matters

The Board's Filing Manual requires applicants seeking a Certificate under section 52 of the NEB Act to provide information on land matters. Applicants are expected to provide a description and rationale for the proposed route of a pipeline, the location of associated facilities, and the permanent and temporary lands required for a project. Applicants are also expected to provide a description of the land rights to be acquired and the land acquisition process, including the status of land acquisition activities.

8.1 Route Selection

Within the proposed Project area, there are three regions of special interest. They are the proposed Peace Boudreau Protected Area (PBPA), PMT and ACCI and are located within the Dawson Creek Land Resource Management Plan. SFN and WMFN identified the ACCI in the 1980s and the PMT in 2006 under the *Draft Peace Moberly Tract Sustainable Resource Management Plan* (MFLNRO, 2006). These areas were identified because of the cultural, commercial, recreational and sustenance (i.e., hunting, trapping and fishing) resource value that they provide to Aboriginal groups in the area. For additional information about routing, please refer to Chapter 7.

Views of NGTL

NGTL assessed a variety of routing alternatives by examining a number of route selection criteria, undertaking a preliminary constructability assessment and considering feedback from engagement with Aboriginal communities, landowners and government agencies.

As described in Chapter 5 Facilities and Emergency Response Matters of this report, the proposed Project requires a total of 301 km of RoW in two sections: the Aitken Creek Section (approximately 182 km) and the Kahta Section (approximately 119 km).

Details of each of NGTL's alternative routes for the Aitken Creek Section, along with Figure 7-2, are discussed in Chapter 7.

Routing Criteria

NGTL stated it used the criteria listed below to determine its applied-for route.

Environmental considerations:

- reducing the development of new access into remote areas;
- reducing the number and complexity of watercourse crossings;
- avoiding or reducing effects on identified environmentally sensitive areas (e.g., wetlands);
- avoiding or minimizing routing through areas of unstable terrain; and

- paralleling existing linear disturbances to reduce the potential fragmentation of wildlife habitat.

Socio-Economic & Land Considerations:

- maximizing the amount of Temporary Work Space (TWS) located on existing RoW or other existing disturbances;
- reducing the amount of new (non-parallel) RoW required;
- avoiding lands of designated status such as parks, cemeteries, reserves under the *Indian Act*, and known historic sites;
- input from Aboriginal communities, stakeholders and landowners;
- avoiding routing near urban development and residences;
- reducing the number of road crossings, particularly of highways and paved roads;
- ensuring the facilities are economical to construct and operate; and
- consulting with regulatory agencies to understand issues that may need to be addressed in the routing process.

Aitken Creek Section

According to NGTL, six major alternative corridors for the Aitken Creek Section were considered by the Company.

NGTL indicated that to address concerns from the MFLNRO and the BCOGC about the pipeline route passing through the Pine River Dunes, it developed a plan for micro-reroutes to largely avoid the dune features and to minimize and mitigate effects where avoidance was not feasible.

Kahta Section

NGTL stated the route for the Kahta Section was influenced by the primary control points and existing and future customer plans that would potentially tie into the North Montney Mainline (NMML). NGTL submitted that the route for the Kahta Section was selected by focusing on following existing linear features where possible, reducing the amount of new land disturbance, and minimizing freehold land along the route.

NGTL stated two changes to the Project affected the final proposed route for the Kahta Section: an adjusted end point and a new location for crossing the Sikanni Chief River. As a result of these changes, the overall length of the route was reduced by 5 km from 306 km to 301 km.

NGTL stated that it first undertook to avoid the dune features where feasible by means of micro-reroutes and then, where avoidance was not possible, to minimize disturbance by modifying construction practices and reducing the Project footprint. NGTL developed a Reclamation Plan specific to the Old Growth Management Area (OGMA), to mitigate disturbances within the reduced footprint. NGTL submitted that through the application of these factors, it has developed the most feasible route with the lowest overall effect. NGTL stated its proposed reclamation measures would reduce the impact to both the Pine River Dunes and the Septimus 04 OGMA by largely avoiding the dune features using pipe bends, short bores, reduced right-of-way and temporary work space, minimizing disturbance through winter construction,

and reclamation techniques including replanting. NGTL stated that it discussed this plan with representatives of MFLNRO and BCOGC and although their preference remained re-routing around the feature entirely, MFLNRO and BCOGC indicated that the mitigation and reclamation proposed is appropriate and did not object to the Pine River Dunes micro-routing and Reclamation Plan proposed by NGTL.

Views of Landowners

NGTL initially considered a location for the Groundbirch Compressor Station at NE-34-78-16W6M. Ms. Shoemaker and Ms. Sudnik, two landowners impacted by this originally considered location, expressed concerns about the potential increase in noise levels, air quality issues, potential health effects, concerns regarding a contingency plan for emergency management and the impact on recreational land use. These landowners indicated their preference for an alternate location, which NGTL identified at SW-35-78-16-W6M. Their preference for the location at SW-35-78-16-W6M is based on the potential ability of the existing treeline and berms to obscure possible visual and acoustic impacts. NGTL subsequently revised its Project to locate the Groundbirch Compressor Station at SW-35-78-16-W6M.

Landowners of properties impacted by the revised location raised concerns about the station location. Mr. Brooke and Ms. Cobbaert, the owners of one of the impacted properties, stated that they were contemplating a future development on their property, which would face the proposed compressor station site. They requested NGTL explore options to move the compressor station farther southwest on the site away from their property. These landowners also requested that NGTL explore alternative options for accessing the station and retaining the existing tree line separating their property from the site. Ms. Reaume, the owner of the other impacted property, expressed concerns regarding the value of their land, visual impacts, and environment and safety standards.

NGTL has committed to maintaining the tree line to the south of Mr. Brooke and Ms. Cobbaert's property. NGTL confirmed that after further field investigations, the revised location could be moved 45 metres south and 50 metres west and committed to making this change. NGTL further committed to installing light shields and leaving facility lights off at night (except for over doorways) unless maintenance activities are being conducted.

In response to concerns raised with respect to NGTL's revised location for the Groundbirch Compressor Station, NGTL stated that the revised location appropriately balances a variety of considerations, including environmental, stakeholder, economic and technical factors. NGTL also stated that its Project routing and facilities siting processes have been appropriate, and it has proposed reasonable mitigation to address the concerns that have been raised, such as moving the compressor station away from the landowners' property, retaining the tree line separating the property and the site, modifying the station's access, and, conducting a baseline noise monitoring program at the affected landowner's property.

8.2 Land Requirements

Views of NGTL

NGTL stated that the Project is located on private and Crown land. The land ownership for Aitken Creek Section is 15 per cent freehold land and 85 per cent Provincial Crown land. The Company stated the Kahta Section is located entirely on Provincial Crown land.

NGTL stated that the Project requires a minimum construction RoW width of 32 metres and that, where possible, it will make use of existing disturbance to reduce the amount of new disturbance. The new land required for the RoW will vary in width from 18 metres to 24 metres.

NGTL stated that the RoW will be made up of both TWS and permanent land rights. NGTL confirmed the extent and locations of the TWS for the Project will be finalized in the field prior to, and potentially during, construction, and that TWS will be returned to the provincial Crown after construction, cleanup and reclamation.

NGTL stated that access for the proposed Project would primarily use existing roads where feasible. The total requirements for new permanent access roads for pipeline, compressor and meter stations are 4,310 metres by 20 metres.

The location for the revised site for the Groundbirch Compressor Station is SW-35-78-16-W6M. The other two compressor stations are the Saturn station located at NE-6-81-20-W6M, and the Aitken Creek station located at D-23B/94-B-16.

The total land required for all the compressor stations will be approximately 16 hectares of land and the Aitken and Groundbirch Compressor Stations will require permanent all weather access roads totaling 1,800 metres in length, while the Saturn Compressor Station will utilize existing road infrastructure for access, which will be covered by third party road use agreements. NGTL plans to use existing road infrastructure where feasible.

NGTL confirmed it requires 16 meter stations for the Project and has adjusted the locations of the stations in order to meet customer requirements and to avoid environmentally sensitive terrain such as wetlands and historical resource sites.

The total land required for all meter stations will be approximately 7.3 hectares of land. One meter station will require a permanent all weather access road and is located on private land. The remaining 15 meter stations are located on Crown lands and NGTL stated access to these sites is being evaluated. The total length of new permanent access road is 2,500 m. NGTL plans to use existing road infrastructure where feasible, and for the meter station sites where existing year-round access is not available, a helicopter pad within the meter station footprint will be built to ensure access for maintenance and in case of emergency.

8.3 Land Rights and Land Acquisition

Views of NGTL

NGTL stated that it commenced land acquisition activities on 6 March 2014.

NGTL confirmed that at the time of the oral portion for the GH-001-2014 proceeding it had not completed the process of acquiring all necessary land rights on private lands, but the process was underway.

In its Application, NGTL submitted sample notices of proposed acquisition of lands (drafted pursuant to section 87 of the NEB Act), which include a description of what land is required, and a statement of the value of that land, among other things. NGTL also submitted sample land acquisition agreements (drafted pursuant to section 86 of the NEB Act), which contained the terms under which required land will be acquired.

NGTL confirmed it has removed access roads from the scope of its Section 58 Facilities, however it would continue to include the access approaches to the temporary infrastructure sites. NGTL also stated it would begin the preparation of all other access roads after a Certificate is issued for the entire Project and after any applicable conditions are satisfied.

Views of the Board

The majority of the Board finds NGTL's anticipated requirements for permanent and temporary land rights and the process for the acquisition of these land rights satisfactory and finds that the applied-for route is acceptable.

The Board notes the concerns raised by affected landowners regarding the potential visual impacts of the Groundbirch Compressor Station, and imposes **Condition 13, Appendix II**, requiring NGTL to submit a plan outlining its mitigation of visual impacts.

The Board notes that NGTL no longer requires early RoW preparation and temporary access roads for its Section 58 Facilities. For additional information about these activities, please refer to Chapter 11.

In the event a Certificate is issued for the Project, NGTL will be required to prepare a plan, profile and book of reference (PPBoR) that depicts the proposed detailed route for Section 52 Facilities.

Views of Dissenting Member Shane Parrish

I concur with the majority of the Board on the appropriateness of the Project routing from the Kahta Creek North Meter Station to the Mackie Creek Interconnection. For the reasons stated in Chapter 7, my recommendation would be that GIC approve the portion of the Project from Kahta to Mackie Creek, but not the portion of the Project from Mackie Creek to Saturn.

Chapter 9

Environment and Socio-Economic Matters

As the proposed Project is over 40 km in length, it is a designated project under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) and therefore requires the Board, as the Responsible Authority, to conduct an environmental assessment (EA) and prepare an EA report. The Board also considers environmental protection as part of its broader mandate under the NEB Act. When making its recommendations, the Board is responsible for assessing the environmental and socio-economic effects of the Project. This chapter represents the Board's EA.

9.1 The CEAA, 2012 Context

The Board posted a Notice of Commencement on the Canadian Environmental Assessment Registry Internet Site (CEARIS) on 23 January 2014 and its reference number is 80057. On 27 January 2014, the Board posted on the CEARIS a description of the factors to be taken into account in the EA and the scope of those factors as required by subsections 19(1) and 19(2) of the CEAA 2012. The environmental effects considered include those listed in subsection 5(1) of the CEAA 2012, as well as other effects pursuant to subsection 5(2) and the requirements set out in the Board's Filing Manual.

9.2 The Board's Environmental Assessment Methodology

In assessing the environmental and socio-economic effects of the Project, the Board used an issue based approach as set out in the Board's Filing Manual for applicants.

This assessment begins with a description of the setting and the environmental and socio-economic elements within that setting (section 9.3), and a list of the environmental concerns raised by participants (section 9.4). The Board identified interactions between the Project and environment that are expected to occur, and any resulting potential adverse environmental effects (section 9.5). If there were no expected Project-environment interactions or interactions resulting in positive or neutral effects, then no further examination was deemed necessary.

The Board then assessed the potential adverse environmental and socio-economic effects, as well as the adequacy of the Applicant's proposed environmental protection strategies and mitigation measures (section 9.5). Subsection 9.5.3 discusses the extent to which NGTL relies on standard measures to mitigate potential adverse effects. Subsection 9.5.4 provides detailed analysis of issues that are of public concern or of environmental consequence, and that may require additional mitigation. The Board assesses whether further mitigation is recommended by way of conditions on any potential project authorization. For each issue considered in detail, subsection 9.5.4 includes a summary of the views of participants and views of the Board.

Where any residual effects remain after proposed mitigation, the Board considered cumulative effects (section 9.6). The Board then discusses follow-up under the CEAA 2012 (section 9.7) and provides its determination of significance (section 9.8).

Chapter 2 of this Report provides a general description of the Project. The following table provides further details on Project components and activities relevant to the EA.

Table 9-1: Project Components and/or Activities

Project Components and/or Activities
Pipeline Construction Phase – Timeframes: • *Aitken Creek Section RoW preparation and related infrastructure installation: first quarter 2015* • *Aitken Creek Section and Kahta Section construction camps: first quarter 2015* • *Aitken Creek Section pipeline construction: third quarter 2015 to first quarter 2016* • *Kahta Section RoW preparation and related infrastructure installation: fourth quarter 2015* • *Kahta Section pipeline construction: third quarter 2016 to first quarter 2017* RoW preparation and related infrastructure installation: • Clearing, grubbing and grading for the RoW and all temporary and permanent infrastructure. Construction corridor of 55m that includes the minimum 32m construction RoW and temporary workspace. • Stringing, welding, coating, trenching and backfill. • Construction of new access roads. • Construction and operation of work camps. • Isolated crossing at sites with watercourse flows less that $4m^3/s$, channel widths less than 100 m and water depths less than 2 m. • Open cut crossings at crossing sites where isolation crossings are not possible. • Horizontal directionally drilled crossings at Peace River, Pine River, Halfway River, Sikanni Chief River and Farrell Creek Crossing. • Hydrostatic test water to be withdrawn from the Pine River, Peace River, Halfway River, Lily Lake, Sikanni Chief River and Buckinghorse River. • RoW clean-up and reclamation. • Construction of compressor stations, meter stations and other permanent above-ground infrastructure roads.

Project Components and/or Activities
Operation Phase – Timeframe: Service life of the Project (estimated in-service date: second quarter 2016 for Aitken Creek Section and second quarter 2017 for Kahta Section) • Permanent access roads • RoW maintenance including vegetation control, erosion control, line integrity flyovers and third party activity near lines • Facility maintenance
Abandonment Phase – Timeframe: At the end of the service life of the Project • Pursuant to the NEB Act, an application would be required to abandon the facility, at which time the environmental effects would be assessed by the Board.

9.3 Environmental Setting

Land Use

- The Project is located in the Peace River Basin, Central Alberta Upland and Muskwa Plateau ecoregions.
- The entire Project is located 16.1% on private freehold land and 83.9% provincial Crown land. The predominant land use activity along the entire Project route is forestry and the secondary land use is agriculture.
- Land use along the Aitken Creek Section is 82% forested, 5% forested cutblock, 4% hayland, 4% pasture, 3% muskeg, 1% cultivated and 1% river crossings.
- Land use along the Kahta Section is 79% forested, 17% muskeg, 4% forested cutblock and <1% other disturbed land.
- The Project traverses lands managed under the Fort St. John Land and Resource Management Plan (LRMP) and the Dawson Creek LRMP and intersects three Fish and Wildlife Map Reserves.
- The Project parallels existing linear disturbances for approximately 155 km (51%)
- NGTL will use existing access roads where feasible, however NGTL will require some 20 m wide new permanent access roads for the Project, as set out in Table 9-2.

Table 9-2: Proposed Permanent Access Roads

Project Component	Required Length of New Permanent Access Roads (m)
Pipeline	10
Compressor Stations	1,800
Meter Stations	2,500

Physical Environment and Soils

- Soils along the Aitken Creek Section are developed primarily on morainal (59%) and lacustro-till (23%) deposits.
- Soils along the Kahta Section are developed primarily on morainal (87%) deposits.

Vegetation

- The Project is located predominately in the Boreal White and Black Spruce Biogeoclimatic Ecosystem Classification (BEC) Zone (98.2% of the Local Assessment Area (LAA)) with the remaining 1.8% located in the Spruce Willow Birch BEC Zone.
- No plant species with special conservation status listed under SARA or Committee on the Status of Endangered Wildlife in Canada (COSEWIC) were found during field surveys conducted for the Project.
- The Project traverses 11 Landscape Units that have old growth retention targets established by the government of British Columbia under the *Provincial Non-Spatial Old Growth Order*.
- The Project intersects two areas identified as legal Old Growth Management Areas.
- Rare plant surveys identified the following provincially rare plant species: Iowa golden saxifrage, northern bog bedstraw, old man's whiskers, rusty woodrush, least moonwort, bear paw, fig-leaf pixie, swollen beaked sedge, Wulf's sphagnum and whip fork moss.
- Field surveys identified four provincial noxious weed species, creeping thistle, perennial sow thistle, Canada thistle and false mayweed as well as three regional noxious species, marsh thistle, quackgrass and oxeye daisy.

Water Quality and Quantity

- The Aitken Creek Section of the Project lies within the Peace River basin and crosses watercourses in five major watersheds near Hudson's Hope, Fort St. John, and Dawson Creek. The watersheds include the Pine, Upper Peace, Lower Halfway, and Lower Beatton River watersheds. The Aitken Creek Section will cross 34 defined watercourses and 97 non-defined channel watercourses.
- The Kahta Section of the Project lies within the Peace and Liard River basins and crosses watercourses in the Beatton and Upper Sikanni Chief Watersheds, and Fort Nelson River sub-basin. The Kahta Section will cross 58 defined watercourses and 62 non-defined channel watercourses.

Fish and Fish Habitat

- A total of 34 fish species, including 15 sport fish species, have the potential to inhabit watercourses crossed by the Project in the Aitken Creek Section.
- There are no federally-listed fish species found within the Aitken Creek Section, however one provincially threatened species (spottail shiner) is known to occur in the Moberly and Peace Rivers, and four species of special concern (bull trout, goldeye, northern redbelly dace, and northern pearl dace) occur in several watercourses crossed by the Project.
- A total of 31 fish species, including 13 sport fish species, have the potential to inhabit watercourses crossed by the Project in the Kahta Section.
- There are no federally-listed fish species found within the Kahta Section, however one provincially threatened species (spottail shiner) and three species of special concern (bull trout, northern redbelly dace and northern pearl dace) could occur in watercourses crossed by the Project.
- The Pine River, Peace River, Farrell Creek, Halfway River and Sikanni Chief River are proposed to be crossed by trenchless methods, while the remainder of the watercourses are proposed to be crossed by isolation methods or by open cut.

Wetlands

- The Project traverses 138 wetlands with treed fens (46), shrubby swamps (28), shrubby fens (19) and treed bogs (14) accounting for 77% of the wetland types.
- Table 9-3 sets out the proposed facilities locations that are sited wholly or partially in identified wetlands.

Table 9-3: Proposed Facilities in Identified Wetlands

Facility	Wetland Type
Groundbirch Compressor Station	Shrubby swamp
Halfway River Receipt Meter Station	Treed fen
Mason Creek Receipt Meter Station	Needle-leaf treed swamp
Buckinghorse River Receipt Meter Station	Treed fen

Wildlife and Wildlife Habitat

- The Project traverses a range of habitat types including coniferous, deciduous and mixedwood forests, wetlands, agricultural areas, riparian habitats and areas managed for silviculture.
- The proposed pipeline route provides habitat for ungulates such as moose, elk, caribou, white-tail and mule deer as well as habitat for wolf, coyote, black bear, grizzly bear, cougar, lynx, porcupine, plains bison, beaver, squirrel, rabbit, raven, woodpecker, hawks, grouse, grey owl and swan.

- The Project is located in two Grizzly Bear Population Units (GBPUs); the Rocky GBPU (135 km) and the Alta GBPU (122 km). The grizzly bear is designated as Special Concern by COSEWIC.
- There are eight federally-listed wildlife species at risk with the potential to occur along the Project route including the Canada warbler (Threatened), common nighthawk (Threatened), olive-sided flycatcher (Threatened), rusty blackbird (Special Concern), yellow rail (Special Concern), western toad (Special Concern), woodland caribou Graham herd (Threatened) and woodland caribou Pink Mountain herd (Special Concern).
- The Project traverses approximately 27 km of identified woodland caribou herd range. Of this, 8.1 km of the Aitken Creek Section traverses the Graham herd range and 19.1 km of the Kahta Section traverses the Pink Mountain herd range.

Atmospheric and Acoustic Environment

- Baseline ambient air quality in the region is good, with few occurrences of poor air quality. Baseline air quality in the regions of the proposed compressor stations is influenced primarily by regional industrial air emission sources. All monitored ambient concentrations of NO_2, $PM_{2.5}$ and CO are below the applicable regulatory objectives and standards for ambient air quality.

Human Occupancy and Resource Use

- The Project does not cross municipal lands, any federally-designated parks, historic sites, protected designated fisheries-sensitive watersheds.
- There are several provincially-designated parks in the RAA and LAA, however none are transected by the Project.
- Approximately 44 km of the RoW intersects visually sensitive units classified as very low to medium visual sensitivity, and 32.1 km classified as high to very high visual sensitivity.
- Areas of higher visual sensitivity near the RoW include the Buckinghorse River Wayside Park, Sikanni Chief, the Beatton River crossing, Mile 126 of the Alaska Highway, Farrell Creek, and Peace River.
- Four designated recreational areas are located in proximity to the Project:
  - Beaver House Recreational Site,
  - Buckinghorse Wayside Provincial Park,
  - Stuart Lake motorized trail recreational line, and
  - Windy Creek Recreational Reserve.
- Outdoor recreational activities, such as hunting, hiking and snowmobiling, occur throughout the region.
- Recreational fishing occurs on the major watercourses and lakes.
- The Project does not traverse any Federally-owned or administered land including Indian Reserves as defined under the Indian Act.

- The proposed route is not located in an existing national wildlife area, provincial park, ecological reserve, forest, regional park, or national park.

Heritage Resources

- Archaeological studies conducted in support of the Project identified 20 new sites within the Project Development Area (PDA), including 16 in the Aitken Creek Section and an additional 4 new sites in the Kahta Section. Sixteen previously recorded archaeological sites were also revisited within the Aitken Creek Section of the PDA.

Traditional Land and Resource Use

- The following 14 communities participated in TLU studies for the Project:
  - Blueberry River First Nations
  - Dene Tha' First Nation
  - Doig River First Nation
  - Halfway River First Nation
  - Horse Lake First Nation
  - Kelly Lake Cree Nation
  - Métis Nation British Columbia (on behalf of Fort St. John Métis Society, North East Métis Association of British Columbia and Moccasin Flats Métis Society)
  - McLeod Lake Indian Band
  - Prophet River First Nation
  - Saulteau First Nations
  - West Moberly First Nations
- The Saulteau and West Moberly First Nations have identified a shared ACCI in the Moberly Lake area, within the planning area of the Dawson Creek LRMP.
- The proposed route traverses approximately 8.8 km of the PMT. SFN and WMFN identified the PMT in 2006 under the *Draft Peace Moberly Tract Sustainable Resource Management Plan* (MFLNRO, 2006) because of the cultural, commercial, recreational and sustenance (hunting, trapping and fishing) resource value it provides.

Fishing

- DRFN members continue to make traditional use of the land and resources throughout the region, and traditional fishing is among the current use for traditional purposes identified by DRFN participants. The Peace River Valley was identified as an especially highly used area. The Peace, Moberly, and Pine Rivers and Farrell Creek were identified as important watercourses that would be affected by the Project.
- HRFN reported harvesting fish from the confluence of the Peace River and Halfway River, near the Red Deer Falls, Pink Mountain, Stoney Lake and Fraser Lake. HLFN reported

fishing around Kinuseo Falls, Kinuseo Creek, Murray River, Wapiti River, Red Deer River, Kelly Lake, and Swan Lake. HLFN noted that there are no longer any fish in Horse Lake.

- KLCN members' important areas for fishing include Hook Lake, Onion Lake, Stoney Lake, Kiskitanaw River, Cutbank River, Trout Lake, and Monkman Creek
- Historical MLIB fishing sites in the Moberly River (KP 45 to KP 70) were identified along the proposed Project route.
- Important fishing areas and species for KLMSS include Hook Lake, Onion Lake, Stoney Lake, the Kiskatinaw River, Trout Lake, and Monkman Creek.

Hunting

- DRFN reported important subsistence hunting areas throughout the Project area. The Peace River Valley, the Del Rio area, the Farrell Creek area, and the area near the Alaska Highway north of the Halfway River Reserve, were all identified as areas affected by the Project where DRFN members continue to hunt.
- HLFN report hunting year round, hunting sites used by HLFN include Nose Creek, Norway, Wapiti River, Nose Mountain directly south of HLFN reserve lands, Red Deer Falls, Pink Mountain, and Quintette Mountain, south of Stoney Lake and towards Fort St. John.
- MLIB identified hunting as a TLU activity. Two historical hunting areas for MLIB were identified along the proposed Project route.
- Harvested foods continue to be important to MNBC members for sustenance. The MNBC TLU study indicates that MNBC members continue to hunt within the study area for large game, small mammals, and birds and waterfowl.
- KLMSS indicated that its members continue to use their traditional hunting and trapping area, which encompasses an area on the Alberta-BC border including portions of the Peace River area.
- NEMA reported hunting as a TLU activity, but no traditional hunting sites were identified along the proposed Project route.
- PRFN's TLU study indicated that hunting continued to be important to PRFN members.
- Hunting continues to be a culturally and economically significant activity for WMFN.
- BRFN has an extended area for hunting around the Blueberry River reserve northward to the Sikanni Chief River, east to the Milligan Hills, and west to the Blueberry River.

Trapping

- DRFN members identified the Peace River Valley as an especially highly used area for trapping.
- HRFN members continue to trap and hold provincial traplines. Areas of importance for harvesting include the confluence of the Cameron River and Halfway River and the Chowadie area.
- HLFN reported it has traplines near Grand Prairie and north of Horse Lake.

- Hunting and trapping are practiced by KLCN and remain important livelihoods for KLCN people. KLCN people currently hold eight traplines, which stretch across the KLCN Traditional Territory. Trapping grounds include watersheds of the Athabasca, Peace, Smoky, Kiskatinaw, Redwillow, Murray, Belcourt Creek, Sukunka and Wapiti Rivers.
- KLMSS has indicated that it continues to use its traditional hunting and trapping area, which encompasses an area on the Alberta-BC border, including portions of the Peace River area.
- MLIB reported trapping as a TLU activity, but no trapping areas used by MLIB were identified along the proposed Project route. Trapping still represents an economic activity for MNBC members, and MNBC identified a number of active trappers in the Project area.
- Trapping continues to be a culturally and economically significant activity for WMFN. Three WMFN members hold provincial traplines, and WMFN maintains a communal trapline for general use.
- BRFN has a number of registered traplines covering an extended area around the Blueberry River reserve northward to the Sikanni Chief River, east to the Milligan Hills, and west to the Blueberry River.

Trails and Travelways (Including Navigation)

- DRFN indicated that the Project intersects key traditional travel and use corridors, including trails associated with the Peace, Moberly and Pine Rivers.
- The Halfway River was identified as a major transportation route and fishing, hunting, and harvesting area for HRFN.
- KLCN trappers and their families continue to use traditional water-based travel corridors. Tributaries in the Traditional Territory serve as travel corridors facilitating trade with Shuswap, Ktunaxa, Sekani, and Beaver tribes.
- MLIB noted the importance and historical use of trails and travelways, but no trails and travelways were identified along the proposed Project route.
- PRFN identified a pack trail and indicated that PRFN members have travelled throughout the area for hunting, riding, and berry picking.

Habitation sites

- DRFN indicated that there are a number of camp sites used by DRFN within five km of the Project.
- KLMSS identified a large number of family settlements and community camps in the region. There are a number of historical trails connecting cabins and settlement sites.
- MLIB identified a number of cabins and a camp site in the vicinity of the Project, but no habitation sites were identified along the proposed Project route.
- MNBC has identified several different types of habitation sites, including settlements, cabins, caches, gathering places, temporary overnight sites, and protection sites.
- NEMA identified several habitation sites in the vicinity of the Project, but no habitation sites were identified along the proposed Project route.

- PRFN indicated that a cabin site and a campsite were identified in the vicinity of the Project; the exact locations were not disclosed.
- SFN establish hunting, trapping, and plant gathering camps every summer. SFN members stay at these camps, engaging in traditional activities. Specifically, the PMT is an area of high importance for traditional foods and country foods.

Gathering Places

- DRFN indicated that important DRFN gathering places exist in the greater Peace River Valley, and that the Bear Flats is an area used in the past and currently as a gathering place. Cache Creek was historically used by DRFN and other First Nations peoples for caching foods during hunting and gathering seasons.
- MLIB identified gathering places in the vicinity of the Project, but no gathering places were identified along the proposed Project route. MLIB indicated a number of drinking water collection sites in the Project area.
- PRFN holds gatherings where berry picking, social events, and hunting take place. Areas of cultural significance specifically mentioned by PRFN are the north side of the Buckinghorse River, east of the Buckinghorse campground, Mason Lake, and north and south of the Sikanni Chief River.
- SFN establishes hunting, trapping, and plant gathering camps every summer. Specifically, the PMT is an area of high importance for traditional foods and country foods.

Sacred Sites

- DRFN stated that the TLU study indicated that important DRFN sacred places exist in the greater Peace River Valley and that the Bear Flats is an area used in the past and currently as a ceremonial place.
- HRFN identified sacred sites used in ceremony between Hudson's Hope and Taylor, BC. An area known as Dreamer's Rock was identified as being of particular importance.
- KLMSS identified three sacred and culturally important areas for which the community does not want to share detailed information.
- MLIB identified only one sacred site, which is located at War Horse Falls, a considerable distance from the Project.
- NEMA identified only one sacred site, a cemetery near Beaverlodge located a considerable distance from the Project.
- PRFN indicated that there are areas of historical and cultural significance throughout the Treaty 8 traditional territory.

9.4 Environmental Issues of Public Concern

The Board received a number of submissions from participants that raised particular concerns related to environmental issues. Table 9-4 lists the environmental issues raised by participants.

Subsection 9.5.4 provides detailed analysis of for issues that are of public concern or of environmental consequence, and that may require additional mitigation.

Table 9-4: Environmental Issues Raised by Participants

Participant	Environmental Issue(s) Raised	Addressed in Section
Ms. Wendy Reaume	▪ Soil quality ▪ Water quality ▪ Air quality	9.6.3 9.6.4.6
Ms. Kathy Shoemaker and Ms. Vicky Sudnik	▪ Air quality	9.6.3 9.6.4.6
Environment Canada	▪ Wildlife and wildlife habitat ▪ Species at risk ▪ Wetlands ▪ Migratory birds	9.6.3 9.6.4.4 9.6.4.5
Blueberry River First Nations	▪ Wildlife and wildlife habitat ▪ Cumulative effects	9.6.3 9.6.4.1 9.6.4.4 9.6.4.5 9.7
Prophet River First Nation	▪ Wildlife and wildlife habitat ▪ Cumulative effects ▪ Accidents and malfunctions	9.6.3 9.6.4.1 9.6.4.4 9.6.4.5 9.7
Saulteau First Nations	▪ Wildlife and wildlife habitat ▪ Cumulative effects	9.6.3 9.6.4.1 9.6.4.4 9.6.4.5 9.7
West Moberly First Nations	▪ Wildlife and wildlife habitat ▪ Cumulative effects	9.6.3 9.6.4.4 9.6.4.5 9.7

9.5 Environmental Effects Analysis

9.5.1 Interactions and Potential Adverse Environmental Effects

Table 9-5 identifies the expected interactions between the Project and the environment, and the potential adverse environmental effects resulting from those interactions.

Table 9-5: Project-Environment Interactions

	Environmental Element	Description of Interaction (or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Discussed in:
Bio-Physical	Physical Environment	▪ Clearing, grading, trenching and backfilling during construction of pipeline and permanent facilities. ▪ Interaction with areas of discontinuous permafrost in the Kahta Section	▪ Altered landscape contours and drainage patterns ▪ Areas of terrain instability may occur as a result of construction activities ▪ Ground thermal regime changes	Standard Mitigation (9.6.3)
	Soil and Soil Productivity	▪ Clearing, grading, trenching and backfilling during construction of pipeline and permanent facilities. ▪ Interaction with areas of discontinuous permafrost in the Kahta Section	▪ Topsoil loss due to wind and water erosion ▪ Topsoil or subsoil degradation during soil handling ▪ Soil compaction and rutting ▪ Altered landscape contours and drainage patterns ▪ Soil contamination from equipment leaks and spills ▪ Ground thermal regime changes	Standard Mitigation (9.6.3)
	Vegetation	▪ Clearing of vegetation, grading, trenching and backfilling during construction of pipeline and permanent facilities ▪ Human and equipment traffic during construction and operations maintenance activities	▪ Changes in plant species diversity ▪ Changes in vegetation community diversity ▪ Changes in landscape diversity	Standard Mitigation (9.6.3)
	Water Quality and Quantity	▪ Pipeline construction and operation. Clearing, grading, trenching, drilling, watercourse crossings, stringing pipe, lowering, backfilling, hydrostatic testing, cleanup and final reclamation may disrupt surface and groundwater flows and quality	▪ Changes to surface water quality due to construction activities, erosion, HDD crossings or accidents	Standard Mitigation (9.6.3) 9.6.4.2 9.6.4.3

	Environmental Element	Description of Interaction (or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Discussed in:
	Aquatic Species and Habitat	▪ Pipeline construction (clearing, grading, trenching, drilling, stringing pipe, lowering, backfilling, hydrostatic testing, and final reclamation) at watercourse crossings	▪ Change in fish habitat ▪ Change in fish mortality risk ▪ Change in water quality	Standard Mitigation (9.6.3) 9.6.4.2 9.6.4.3
	Wetlands	▪ Pipeline construction (clearing, grading, trenching, drilling, watercourse crossings, stringing pipe, lowering, backfilling, hydrostatic testing, cleanup and final reclamation)	▪ Changes in wetland function (habitat and hydrological)	Standard Mitigation (9.6.3)
	Wildlife and Wildlife Habitat	▪ Pipeline construction (clearing, grading, trenching, drilling, backfilling, hydrostatic testing, and final reclamation) ▪ Wildlife attraction to wastes from construction and construction camps ▪ Vegetation control for operations and maintenance purposes ▪ Use of construction vehicles and equipment during construction and operation of pipeline ▪ Increase in public access as a result of construction activities	▪ Change in wildlife habitat availability ▪ Change in wildlife mortality risk ▪ Change in wildlife movement	Standard Mitigation (9.6.3) 9.6.4.4 9.6.4.5
	Species at Risk or Species of Special Status and Related Habitat	▪ Refer to interactions provided for Vegetation, Aquatic Species and Habitat and Wildlife and Wildlife Habitat	▪ Stress, injury, reduced reproductive success and mortality of wildlife species at risk, leading to population declines ▪ Loss or change in habitat for wildlife species at risk	Standard Mitigation (9.6.3) 9.6.4.4 9.6.4.5

	Environmental Element	Description of Interaction (or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Discussed in:
	Atmospheric Environment	▪ Operation of construction equipment ▪ Operation of proposed compressor stations ▪ Emissions from monitoring and surveillance traffic during operations	▪ Increase in airborne pollutants ▪ Increase in greenhouse gases (GHG)	Standard Mitigation (9.6.3) 9.6.4.6
	Acoustic Environment	▪ Operation of construction equipment ▪ Operation of proposed compressor stations ▪ Sound emissions from monitoring and surveillance traffic during operations	▪ Change in baseline sound level may affect health if levels exceed regulated (provincial) guidelines	Standard Mitigation (9.6.3)
Socio-Economic	Human Occupancy/Resource Use (including Fisheries)	▪ Pipeline construction (clearing, grading, trenching, drilling, watercourse crossings, stringing pipe, lowering, backfilling, hydrostatic testing, cleanup and final reclamation) ▪ Equipment traffic during operations and maintenance ▪ Operations and maintenance activities ▪ Installation of temporary crossings	▪ Decrease in commercial and sustenance agriculture ▪ Disruption for oils and gas and energy producers ▪ Decrease in access to private property ▪ Decrease in available forested Crown lands ▪ Decreased trapping and guiding opportunities ▪ Decrease in access to recreation areas might reduce recreational hunting and fishing activities and as a result an annual tourism revenue ▪ Interruption in access to navigable waters ▪ Decrease in groundwater quantity and quality within the PDA for rural, domestic and agricultural groundwater use	Standard Mitigation (9.6.3)

	Environmental Element	Description of Interaction (or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Discussed in:
	Heritage Resources	▪ Pipeline construction (clearing, grading, trenching, drilling, watercourse crossings, stringing pipe, lowering, backfilling, hydrostatic testing, cleanup and final reclamation)	▪ Disturbance to, or loss of, previously recorded or undiscovered heritage sites	Standard Mitigation (9.6.3)
	Current Traditional Land and Resource Use	▪ Pipeline construction (clearing, grading, trenching, drilling, watercourse crossings, stringing pipe, lowering, backfilling, hydrostatic testing, cleanup and final reclamation) ▪ Equipment traffic during operations and maintenance ▪ Operations and maintenance activities	▪ Disturbance to, or loss of, previously unrecorded traditional land use sites ▪ Disturbance to, or interference with, traditional uses during construction and operation activities	Standard Mitigation (9.6.3) 9.6.4.4
	Navigation and Navigation Safety	▪ Pipeline construction (clearing, grading, trenching, drilling, backfilling, hydrostatic testing, and final reclamation) at watercourse crossings ▪ Installation of temporary crossings	▪ Interference with navigating during construction ▪ Decrease in access to navigable waters for waterway users including Aboriginal communities ▪ Restriction on navigation	Standard Mitigation (9.6.3)
	Social and Cultural Well-being	▪ Construction – influx of temporary workforce	▪ Influx of temporary workers could disrupt communities or residents ▪ Decrease in availability of local services	Standard Mitigation (9.6.3)
	Human Health/Aesthetics	▪ Operation of compressor stations – air and noise emissions ▪ Construction and operation of the Project	▪ Health effects on local residents from decreased air quality ▪ Health effects on local residents from changes to the acoustic environment as a result of HDD activities and pump station operations	Standard Mitigation (9.6.3)

	Environmental Element	Description of Interaction (or Why No Interaction is Expected)	Potential Adverse Environmental Effect	Mitigation Discussed in:
			▪ Health effects on local residents associated with impacts to surface water and groundwater	
Other	Accidents/Malfunctions	▪ Pipeline break or leak ▪ Pipeline repair or replacement ▪ Equipment traffic ▪ Spills of hazardous material (e.g., hydraulic fluid, motor oil, gasoline, antifreeze) ▪ Fire ▪ Release of mud during HDD	▪ Spill or accidental release of hydrocarbon during construction and operation ▪ Release of natural gas as a result of pipeline rupture ▪ Damage to other facilities during pipeline construction	Standard Mitigation (9.6.3)
	Effects of the Environment on the Project	▪ Landslides and Hydrologic Hazards ▪ Flooding ▪ Wildfire ▪ Extreme Weather	▪ Exposure of pipeline and/or loss of depth of cover due to landslides, flooding and erosion at watercourses ▪ Damage from wildfire ▪ Effects on scheduled construction and operation schedules ▪ Worker injury	Standard Mitigation (9.6.3)

9.5.2 Mitigation of Potential Adverse Environmental Effects

In its application, NGTL has identified routine design and standard mitigation to mitigate most of the potential adverse environmental effects identified in Table 9-5. NGTL's application and supporting documentation includes its draft Environmental Protection Plan (EPP), which details all of NGTL's proposed mitigation.

Where there are outstanding issues regarding key environmental elements, or the Applicant's proposed mitigation may not be sufficient and additional mitigation may be necessary, then a detailed analysis is presented in subsection 9.5.4.

9.5.3 Standard Mitigation

The Board recognizes that many adverse environmental effects are resolved through standard mitigation. Standard mitigation refers to a specification or practice that has been developed by industry, or prescribed by a government authority, that has been previously employed successfully and is now considered sufficiently common or routine that it is integrated into the company's management systems and meets the expectations of the Board.

Views of NGTL

NGTL's mitigation measures are contained in the Application, Environment Protection Plan (EPP) and associated Environmental Alignment Sheets. NGTL accepts the findings in the ESA and will adhere to the recommendations and mitigation measures identified in the ESA and the EPP. Among the mitigation strategies to avoid or minimize the effects of the Project, NGTL is relying in part on paralleling existing linear disturbances, reducing the number and complexity of watercourse crossings, avoiding environmentally sensitive areas and environmental inspections during and post construction. In order to mitigate impacts to soil and soil quality, NGTL will implement mitigation to control topsoil loss through erosion, and conduct topsoil salvage for all arable or potentially arable lands within the Agricultural Land Reserve (ALR) and for all non-ALR lands currently within an agricultural land use. Project effects on navigation and navigation safety will be addressed through standard mitigation, including the installation of warning signs, user notification, trenchless crossing methodology and restoration and stabilization of banks upon completion of construction. In addition, standard mitigation is proposed to avoid or minimize potential adverse environmental effects on the terrain and topography of the area, water quantity and quality, native vegetation including rare plant populations and ecological communities, wetlands, wildlife, atmospheric and acoustic environments, and human receptors (as identified in Table 9-5).

Views of the Board

To be satisfied that all site-specific mitigation measures are appropriate and will be implemented according to their intent, the Board imposes the following conditions:

Environment Protection Plan

The Board imposes **Condition 14 (Appendix II) and Condition 9 (Appendix III)** requiring NGTL to file an updated, Project-specific EPP to communicate all environmental protection procedures and mitigation measures to employees, contractors and regulators. The commitments should be as clear and unambiguous as possible to minimize errors of interpretation. In cases where there may be multiple ways of achieving the desired outcome, the EPP should state the

goal, mitigation options, and clear decision-making criteria for choosing which option to apply under what circumstances. Where a mitigation option is mandatory it should be clearly stated as such. Updated Environmental Alignment Sheets are also to be included with the EPP.

The EPP should be comprehensive and cover general and site specific mitigation related to all environmental elements.

NGTL shall file an updated EPP specific to the Project 60 days prior to commencement of construction of the Section 52 Facilities, and 45 days prior to the Section 58 Facilities in order to allow sufficient time for an effective review process.

Construction Progress Reports

In order to track construction activity and environmental, socio-economic, safety and security issues during construction, the Board imposes **Condition 27 (Appendix II) and Condition 11 (Appendix III)** requiring NGTL to file monthly construction reports. These reports shall include information on the activities carried out during the construction and report any environmental, socio-economic, safety and security issues and issues of non-compliance; and the measures undertaken for the resolution of each issue and non-compliance.

Each progress report after 15 December 2015 for the Aitken Creek Section and after 15 December 2016 for the Kahta Section shall also include an update on the extent to which potential delays to the construction schedule filed with the Board risk the overlap of construction activities with the caribou critical timing windows, and an explanation of whether any additional mitigation measures need to be implemented to reduce that risk.

Post Construction Monitoring Reports

To be satisfied that post-construction environmental monitoring is thorough and effective and that reports are to be developed and submitted, the Board imposes **Condition 39 (Appendix II).**

9.5.4 Detailed Analysis of Key Environmental and Socio-Economic Issues

There are six issues explored in detail in the following subsections. Table 9-6 specifies the definitions for criteria used in evaluating the significance of residual effects.

9.5.4.1 Watercourse Crossings

Background	NGTL stated that the pipeline watercourse crossing locations are preliminary and that final locations as well as the crossing method and timing will be subject to engineering and environmental site evaluations, geotechnical assessments, Aboriginal, landowner and stakeholder engagement, land acquisition and consultation with regulatory authorities. Site specific information for the exact watercourse crossing location may differ from the information provided in the Application. Detailed information is required in order to mitigate potential impacts to fish and fish habitat. NGTL provided the watercourse crossings that it believes will require a *Fisheries Act* Authorization. Under the Memorandum of Understanding (MOU) between the Board and the Department of Fisheries and Oceans (DFO), the Board is responsible for referring potential watercourse

	crossings that may likely require a *Fisheries Act* Authorization to DFO. Information must be provided to DFO in the form of a draft authorization package according to Schedule 1 of the *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations.* Under the implementation of the MOU, it is the responsibility of the Board to assess whether the draft authorization package is complete before the proponent applies to DFO for a *Fisheries Act* Authorization.
Proposed Mitigation	NGTL stated that trenchless crossings are to be used for crossings with sensitive or high-value fisheries and/or with flows, water depths and channel widths that cannot be effectively isolated. NGTL has committed to following the DFO Measures to Avoid Harm when possible. In cases where the DFO Measures to Avoid Harm cannot be met, NGTL has committed to including site-specific mitigation measures to minimize impacts to fish and fish habitat in their EPP. NGTL has committed to obtaining *Fisheries Act* Authorization when serious harm is likely to occur. Where a *Fisheries Act* Authorization is required, NGTL will be obligated to offset 'serious harm'.
Views of the Board	The Board imposes **Condition 23 (Appendix II)** requiring NGTL to finalize watercourse crossing site specific information prior to construction. Where NGTL has committed to trenchless crossings, the Board imposes **Condition 25 (Appendix II)** requiring NGTL to notify the Board of any changes or alternatives. The Board also imposes **Condition 24 (Appendix II)** requiring NGTL to file a draft authorization package according to Schedule 1 of the *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations.*
Evaluation of Significance of Residual Effects	Frequency: Multiple Duration: Short-term Reversibility: Reversible Geographical Extent: LAA Magnitude: Low Adverse Effect Not likely to cause significant adverse environmental effects.

9.5.4.2 Hydrostatic Testing

Background	In its preliminary hydrostatic test plans, NGTL stated that hydrostatic test water could be withdrawn from the Pine River, Peace River, Halfway River, Lily Lake, Sikanni Chief River and Buckinghorse River. Hydrostatic test details will be finalized following field verification of water availability, obtaining withdrawal permits and consultation with the pipeline contractor.

Proposed Mitigation	NGTL committed to a number of mitigation measures in its EPP including restricting water withdrawal to less than 10% of the stream flow at the time of withdrawal, screening all water intakes and monitoring the discharge of hydrostatic test water.
Views of the Board	To verify that proper procedures for the protection of the environment will be utilized for withdrawal and discharging of hydrostatic test water, the Board imposes **Condition 26 (Appendix II)** requiring NGTL to file a hydrostatic testing plan.
Evaluation of Significance of Residual Effects	Frequency: Single; Duration: Short-term; Reversibility: Reversible; Geographical Extent: LAA; Magnitude: Low Adverse Effect Not likely to cause significant adverse environmental effects.

9.5.4.3 Wildlife and Wildlife Habitat

Background	NGTL states that the Project has the potential to alter habitat by widening existing RoWs, creating new RoW in undisturbed areas, and increasing the density of linear features on the landscape. Each of these potential effects will change habitats and their suitability for different species, and change access, wildlife movements and the mortality risk for different species. In conducting its assessment to identify adverse effects on wildlife and wildlife habitat and to determine the significance of those effects, NGTL identified a number of focus species to be used as surrogate species for the assessment. These focus species included species that are either listed on Schedule 1 of the Species at Risk Act (SARA) or are important to Aboriginal groups. NGTL identified these species as woodland caribou (Pink Mountain herd and Graham herd), moose, American marten, grizzly bear, yellow rail, common nighthawk, short-eared owl, olive-sided flycatcher, Canada warbler, rusty blackbird and western toad. NGTL stated that the predicted effects of the Project for the selected focus species were considered applicable to other species with similar life history and habitat requirements. *Change in Habitat* NGTL identified the main mechanism for habitat alteration is through clearing of vegetation. NGTL asserts that it has made efforts to minimize the PDA, follow existing disturbance features where possible and avoid wildlife habitat features along the RoW. NGTL claims that the amount of habitat affected is well below the 20% significance threshold for all focus species. *Change in Mortality Risk* NGTL identified the potential for increased risk of mortality for a number of species during construction. Clearing of vegetation during spring or early summer could destroy active bird nests and nestlings. Increased road use during construction increases the risk of wildlife mortality through vehicle collisions. Active bear dens and hibernating bears

	(particularly cubs) might be encountered during vegetation clearing. During operation, mortality risk might change indirectly because improved access for hunters and predators. Mortality risk is considered greatest for caribou and grizzly bear although moose may also be at risk with improved access within the LAA.
Views of Participants	BRFN expressed concerns over development pushing moose further and further west leading to declines in populations in the Peace Region and BRFN territory. FNFN stated that as a result of gas sector activities in the northern BC, there are series of environmental impacts including linear and areal disturbances that increase habitat fragmentation, which adversely impacts caribou population and other wildlife species. PRFN noted a considerable decline in moose and caribou populations. SFN submitted that moose are heavily relied upon by SFN for sustenance and cultural purposes. SFN is concerned over diminished availability of moose and the impacts of the Project on moose populations and habitat used by moose. WMFN expressed concerns over a rapid reduction in wildlife numbers. WMFN stated that changes to migration routes and sensory disturbances had a negative impact on the wildlife activity and WMFN ability to practice its rights to hunt.
Proposed Mitigation	NGTL has committed to several standard mitigation measures to reduce impacts on wildlife and wildlife habitats such as: • aligning the RoW to follow and share space with existing disturbances as much as possible; • minimizing the width of the RoW where safe and efficient; • staking RoW, staging areas, and temporary workspace to clearly delineate all boundaries; • flagging and fencing off of environmentally sensitive areas (e.g., nests, mineral licks, beaver dams, ponds or lodges, dens) prior to clearing and construction; • avoiding work during critical timing periods defined by provincial governing bodies where possible; • using rollback as per the Province's Interim Operating Practices for Oil and Gas Activities in Identified Boreal Caribou Habitat in British Columbia (2011) and as approved by MFLNRO, earth berms and other access control measures at key locations along the RoW to deter access by humans; • clearing and brushing activities will be limited within the migratory bird nesting period between May 1 and July 31. Any clearing or brushing in this period requires a nest sweep following draft Environment Canada methods; and • enforcing vehicle speed limits on roads. In addition to standard mitigation, NGTL has committed to having and implementing a Wildlife Species of Concern Discovery Contingency Plan, and

	to the development of a Bird Nest Mitigation and Management Plan that would apply to federal and provincial species of concern, including migratory birds. NGTL has also committed to conducting a bear den sweep prior to construction and implementing several access control measures, such as rollback, at specific locations along the RoW to minimize unauthorized human access. NGTL has also committed to monitoring and evaluating the effectiveness of mitigation during its post construction monitoring program.
Views of the Board	The Board is of the view that the standard mitigation measures that NGTL has committed to implementing will address the majority of potential impacts to wildlife and wildlife habitat. The Board is also satisfied that the mitigation proposed by NGTL adequately addresses the concerns raised by Aboriginal groups about the Project effects on wildlife. The Board further notes that clearing returns the RoW to an early seral vegetation community with differing effects on differing species. Further details regarding additional protection for caribou are provided in section 9.5.4.4. The Board is of the view that although NGTL has committed to a bear sweep prior to construction, it has not provided details about timing nor committed to provide the results to the Board. The Board notes that the Project will traverse two GBPUs and further notes that grizzly bear can also sometimes be found outside of these areas. To be satisfied that grizzly bear are protected during construction and that sufficient consultation has taken place with government authorities regarding potential mitigation, the Board imposes **Condition 17 (Appendix II) and Condition 10 (Appendix III)** requiring NGTL to perform pre-construction grizzly bear den sweeps along the entire RoW. If a grizzly bear den is found during the sweeps NGTL shall provide additional mitigation measures and evidence of consultation with appropriate agencies to the Board. Regarding access control, the Board is of the view that this is important in reducing long term impacts to the environment, including to wildlife and wildlife habitat. The Board acknowledges the commitment of NGTL to implement access control along the ROW, but notes that NGTL provided limited details on its overall management. The Board imposes **Condition 16 (Appendix II)** requiring NGTL to file an Access Management Plan describing the details of access control measures proposed for the Project. The plan shall include goals and objectives regarding access management, criteria for measuring the success in achieving these goals and objectives, details on access control sites, control methods proposed and a rationale for their selections and a description of adaptive management measures available and the criteria NGTL would use to determine when, and if, adaptive management measures are warranted. The Board is of the view that wildlife and wildlife habitat issues, particularly for species at risk, should also be considered in the EPP and the Post Construction Monitoring Plan (PCMP). The Board requires NGTL to include details on how these issues will be monitored within its PCMP and that the results of this monitoring are included in PCM reports submitted to the Board. **(Condition 39 (Appendix II))**.

Evaluation of Significance of Residual Effects	Frequency	Duration	Reversibility	Geographical Extent	Magnitude
	Multiple	Short-term to long term	Reversible	PDA to LAA	Moderate
	Adverse Effect				
	Not likely to cause significant adverse environmental effects.				

9.5.4.4 Wildlife and Wildlife Habitat – Caribou

Background	The Project traverses two ranges of woodland caribou; the Pink Mountain local population unit (Northern Mountain Caribou) and the Graham local population unit (Southern Mountain Caribou). The Graham herd is listed as Threatened on Schedule 1 of the SARA and in June 2014, EC released the final *Recovery Strategy for the Woodland Caribou, Southern Mountain Population (Rangifer tarandus caribou) in Canada* (Recovery Strategy), which included the identification of critical habitat for this herd. The Pink Mountain herd is listed as a species of Special Concern under the SARA and as such does not require a Recovery Strategy and the identification of critical habitat. However, in accordance with the SARA, EC has developed the *Management Plan for the Northern Population of Woodland Caribou (Rangifer tarandus caribou) in Canada* (Management Plan) to identify measures for their conservation. NGTL states that the pipeline traverses the Graham herd range for 8.1 km, and is contiguous with existing linear features for approximately 82% of this. The Project also traverses the Pink Mountain herd range for 19.1 km, and is contiguous with existing linear features for approximately 58% of this. NGTL notes that the Project has the potential to alter habitat by widening existing RoWs, creating new RoW in undisturbed areas, and increasing the density of linear features on the landscape which can change the suitability of habitat, affect movement patterns and so increase the mortality risk. During construction, effects on caribou and caribou habitat will occur directly and indirectly mostly through vegetation clearing and sensory disturbance from construction activities. During operation, mortality risk will occur indirectly through altered habitat and improved access for hunters and predators. NGTL states that most evidence supports a minimum 30% residual habitat threshold at a landscape level to avoid rapid declines that might lead to regional extirpation. For its assessment, NGTL used a precautionary 80% residual habitat threshold (i.e., 20% loss) to assess the significance of residual effects in the LAA. NGTL also noted that considerable work has been done to identify linear development thresholds for caribou in British Columbia and adopted the cautionary threshold of 1.2 km/km^2 that has been used in other General Resource Management Zones.

	NGTL states that the density of linear features at the baseline case in both caribou herd ranges intersected by the Project is already higher than the threshold of 1.2 km/km^2. The Project was only considered to contribute to linear features where it was non-contiguous with an existing linear feature. The Project contributes 13.6 km to the Pink Mountain caribou range (an increase of 0.3% from baseline case), and 1.5 km to the Graham caribou herd range (an increase of 0.2% from Baseline Case). WMFN has developed an Action Plan that included critical habitat mapping for the Klinse-za herd of woodland caribou, also known as the Moberly herd (the "Klinse-za Action Plan"). The WMFN expressed concern about the impacts of the Project to the Moberly herd and asserted that NGTL failed to adequately mitigate, avoid or justify significant effects on the Moberly herd.
Views of Environment Canada	With respect to the Project, EC acknowledges that although the final Recovery Strategy was completed in June 2014, the mapping of critical habitat for the Southern Mountain Caribou is incomplete and it is likely that additional critical habitat will be identified within the Graham local population unit. Within the Recovery Strategy, EC identifies a 65% undisturbed area threshold applicable to low elevation winter range and Type 1 matrix ranges for the Graham local population unit. EC also notes that the 65% threshold will be revisited once studies determining an appropriate threshold for the applicable ranges have been completed, or evidence indicates that this disturbance level is not supporting recovery for a local population unit. In the meantime, management of high elevation critical habitat should seek to minimize and mitigate disturbance. EC also determined that there is potential that the Project may result in the destruction of critical habitat for the Graham local population unit. With respect to the Northern Mountain Caribou, EC determined that a portion of the pipeline right of way is located within the Pink Mountain local population unit and recommend that all activities be consistent with the Management Plan.
Proposed Mitigation	In addition to standard mitigation, NGTL has identified timing windows for caribou, and has committed to avoid work where feasible during critical timing periods within caribou ranges. NGTL has filed a preliminary Caribou Mitigation Plan (CMP) to address construction and operational effects of the Project and committed to its implementation to mitigate incremental effects of the Project on caribou. The plan includes measures for human access control, predator range utility, line of sight management, as well as "like-for-like species and vegetation community" revegetation measures. NGTL has also committed to the development of a Caribou Mitigation Monitoring Plan. NGTL also committed to continue engagement with the Province of British Columbia to ensure that the Project is consistent with provincial management strategies.

<table>
<tr><td>Proposed Monitoring</td><td>NGTL has committed to a follow-up program for caribou, which includes assessing whether mitigation is achieving its intent and using adaptive management to determine if corrective measures should be undertaken.</td></tr>
<tr><td>Views of the Board</td><td>The Board notes that the Project will still result in loss of habitat (and could result in disturbance to caribou) beginning with construction and continuing through the lifecycle of the Project, notwithstanding the proposed mitigation within NGTL's EPP and CMP.

The Board believes that disturbances within caribou ranges should be minimized, and measures taken before and during construction to help accelerate the restoration of caribou habitat. The Board is of the view that Project proponents have a responsibility to not only reduce effects on caribou habitat, but to also restore affected habitat as soon as possible and as much as possible. The Board therefore imposes Condition 15 (Appendix II) requiring NGTL to prepare a Caribou Habitat Restoration Plan (CHRP). The Board acknowledges NGTL's preparation and submission of a preliminary CMP and notes that the CHRP will supersede and replace the CMP.

The Board recognizes NGTL's commitment to avoid working, where feasible, within the more stringent critical timing window set by the British Columbia Ministry of Environment. The Board expects NGTL to proactively plan its construction work with sufficient plans to ensure that all construction activities in caribou ranges are feasible and completed within provincial and federal timing restrictions. The Board imposes Condition 27 (Appendix II) and Condition 11 (Appendix III) requiring NGTL to file construction progress reports after December 15 of each year during construction, which must include information on how NGTL will implement measures to ensure all construction activity is completed within the critical timing window.

With respect to the concern of WMFN regarding impacts to the Klinse-za herd, also known as the Moberly herd, the Board notes that the Project does not overlap the current distribution of the Moberly herd. The Board feels that NGTL has identified current caribou distribution in a manner consistent with the Filing Manual and that all mitigation applied to protect the Graham herd will ultimately protect the Moberly herd.
The Board notes that the key impacts to caribou and caribou habitat are through cumulative effects. This is discussed in further detail in section 9.7.2.</td></tr>
<tr><td>Evaluation of Significance of Residual Effects</td><td>
<table>
<tr><td>Frequency</td><td>Duration</td><td>Reversibility</td><td>Geographical Extent</td><td>Magnitude</td></tr>
<tr><td>Continuous</td><td>Long-term</td><td>Possible</td><td>RAA</td><td>Moderate</td></tr>
<tr><td colspan="5">Adverse Effect</td></tr>
<tr><td colspan="5">Not likely to cause significant adverse environmental effects.</td></tr>
</table>
</td></tr>
</table>

9.5.4.5 Air Quality – Criteria Air Contaminant (CAC) and Greenhouse Gas (GHG) Emissions

Background	Construction of the pipeline and associated facilities will result in the emission of CACs and GHGs. However, NGTL states that the resulting emissions will be minimal, will not include sulphur dioxide, and that the resulting effects can be managed to acceptable levels using standard mitigation. The most substantial CAC and GHG emissions for this Project would result from the operation of the compressor stations, through the combustion of sales-quality natural gas in the compressor turbines. Smaller emission quantities are associated with the operation of other combustion sources (i.e., boilers and generators) and fugitive releases at the compressor stations. NGTL provided a quantification of CAC and GHG emissions at each compressor station, as well as a brief discussion on the total operational GHG emissions, assessing significance in terms of the 2011 annual BC GHG emissions for the Pipelines subsector. NGTL also provided a discussion of offset options, for example the applicability of the *BC Carbon Tax Act* on the Project.
Proposed Mitigation	In addition to designing a shorter route, NGTL has further committed to reduce the emissions during operation of the compressor stations using mitigation selecting efficient gas turbine technology and maintaining equipment in good working order. NGTL states that in addition to these commitments, the Project will be subject to the BC *Carbon Tax Act* and NGTL will pay tax on the natural gas burned in the compressors. This is one of the Province of British Columbia's key tools for reducing provincial GHGs.
Views of the Board	Although NGTL did provide a quantification and discussion on the total operational GHG emissions, as well as a discussion of the *BC Carbon Tax Act* requirements, the assessment was provided in a piecemeal fashion over a number of submissions. After considering the multiple submissions, the Board is satisfied that NGTL can meet the provincial requirements related to CAC emissions. However, relating to GHG emissions, the Board notes that NGTL did not provide a quantification of the GHG emissions related to clearing and construction activities. The Board imposes **Condition 32 (Appendix II)** requiring NGTL to file a quantitative assessment of GHG emissions directly related to the construction and clearing of the Aitken Creek and Kahta Sections and **Condition 33 (Appendix II)** requiring NGTL to file an updated quantitative assessment of GHG emissions directly related to the operation of the Project. The filings shall include calculation methodology used and identify assumptions and inputs that may affect the results.

Evaluation of Significance of Residual Effects	Frequency	Duration	Reversibility	Geographical Extent	Magnitude
	Multiple	Short to long-term	Irreversible	PDA to RAA	Low
	Adverse Effect				
	Not likely to cause significant environment effects.				

9.5.4.6 Aboriginal Traditional Land and Resource Use

Background/Issues [and Views of the Participants]	A total of 25 Aboriginal groups were identified by NGTL, the Board and the MPMO as being potentially affected or having an interest in the Project. The following 14 communities participated in TLU studies for the Project: • BRFN • DTFN • DRFN • HLRFN • HLFN • KLCN • MNBC (on behalf of FSJMS, MFMS and NEMA) • MLIB • PRFN • SFN • WMFN NGTL stated that for the purposes of identifying potential Project effects on current use of land for traditional purposes, the Company relied on Project specific information provided directly by Aboriginal communities, as well as publicly available reports and NGTL's operating experience. NGTL submitted that where community specific TLU information was not available, the assessment assumed that lands and resources in the Regional Study Area (RSA) are currently used by these Aboriginal groups in a manner that is consistent with the traditional activities and resources identified for other Aboriginal groups assessed in the ESA. The following Aboriginal groups noted specific concerns regarding traditional land and resource use in the Project area: ***McLeod Lake Indian Band (MLIB)*** MLIB identified broad concerns regarding the cumulative impacts of industrial development on water, wildlife, the introduction and spread of

	invasive plant species, impacts of pollution on wildlife species, and effects on burial sites, burial grounds and cabins. Specific concerns were raised regarding potential effects on predator-prey dynamics as a result of increased line-of-sight created by the right-of-way. No specific locations of concern were identified by MLIB. ***North East Métis Association of BC (NEMA)*** NGTL stated that NEMA's concerns included the introduction and spread of invasive plant species, impacts of pollution on wildlife species, and effects on burial sites, burial grounds and cabins. NEMA community members identified several trails and travel ways in the Project area, with the nearest trail located approximately 2.5 km west of the Project. Community members indicated that they continue to exercise hunting, trapping, fishing and harvesting in the area. No specific mitigation was requested for the Project. ***Métis Nation British Columbia (MNBC)*** MNBC conducted a TLU study for the Project based on its identification of potential effects on Fort St. John Métis Society, Northeast Métis Association and Moccasin Flats Métis Society traditional land uses. MNBC members identified four habitation sites which are historic Métis settlements at Moccasin Flats in Chetwynd, Hassler Flats, Hudson's Hope, and Arras. One gathering place was identified and community members requested that this area be preserved for future use. MNBC indicated that its members exercise traditional activities such as hunting, trapping, gathering medicinal and ceremonial plants, and harvesting berries for food. MNBC also indicated that its members continue to harvest moose, deer and elk within the Project area. ***Prophet River First Nation (PRFN)*** PRFN stated that it continues to exercise land use activities such as hunting, trapping, fishing and gathering in the Project area. PRFN noted safety concerns when exercising cultural activities, including geographic limitation placed on the hunters with regard to discharging firearms for the purpose of harvesting. PRFN raised concerns regarding three culture camps located within the South Sikanni area that may be intersected by the proposed route. PRFN stated these camps are used for variety of traditional purposes including passing on traditional knowledge to younger generations. ***Kelly Lake Cree Nation (KLCN)*** KLCN expressed concerns about interruption in access to important medicinal plant and berry picking sites during construction as well as contamination of the soil, water and air on which the plants are sustained. KLCN requested that an Aboriginal monitor be on site when construction crews are in high use plant gathering areas.

	KLCN stated that hunting for sustenance and for economic reasons is a pivotal traditional activity for KLCN community members. KLCN noted that it is crucial for hunting sites to remain accessible to community members during pipeline construction. KLCN indicated that community members would like NGTL to share its Emergency Response Plan (ERP) so hunters are aware of the construction schedule and activities. KLCN stated fishing and trapping are also part of their traditional activities. ***Blueberry River First Nations (BRFN)*** BRFN stated that the Project transects the heart of BRFN's traditional lands, including spiritual areas, gravesites, and critical hunting, trapping and harvesting grounds. BRFN also stated that the Project area includes lands that have always been and remain of vital importance to BRFN. BRFN expressed concern that a Project-specific traditional land use study involving BRFN has not been completed to contribute to the assessment of Project impacts. BRFN stated that the determination of mitigation measures and conditions to mitigate impacts on BRFN treaty rights were premature given the impacts of the Project on the exercise of BRFN treaty rights had yet to be assessed. ***Fort Nelson First Nation (FNFN)*** FNFN stated that the Project would likely have direct adverse impacts on water, riparian areas, fish and fish habitat and other aspects of the southern portion of the Liard watershed, which flows north into and through the heart of FNFN territory. FNFN expressed concerns that the Project would cause increased linear disturbance to wildlife habitat. FNFN also raised concerns with increased traffic and other activity in a relatively remote and undisturbed part of FNFN territory. It also stated that the Project would displace the animals on which FNFN families and their mode of life depend, and may also affect traditional and recreational activities further north into FNFN territory. ***Saulteau First Nations (SFN)*** SFN identified two areas of special significance for their communities: the ACCI and the PMT. The community stated that it relies heavily upon these areas for sustenance, cultural, commercial, and socio-economic purposes. SFN noted that traditional land use activities in the ACCI are practiced in accordance with Treaty 8 rights, and include hunting for large and small game, trapping for fur bearing animals, fishing, building and maintaining cabins, camping, and building new trails to access these resources. SFN noted that its members actively use these two areas, and in particular, north and east of the SFN reserve, for hunting, fishing, camping, gathering berries and other plant material.

	SFN identified five broad classes of traditional use or occupation that are of significance to SFN: • subsistence, including harvesting and kill sites, and plant collection areas; • habitation, including temporary, seasonal, or permanent camps and cabins; • cultural/spiritual, including burial village sites, ceremonial areas, medicinal plants, and trapping and teaching areas; • transportation, including trails, water routes and navigation sites; • environmental features, including specific highly valued habitat for moose, elk, deer and other animals. SFN reported a total 411 use values related to these five traditional activity classes within the proposed Project LAA and RSA in the PMT. SFN identified ways in which the identified values may be affected by the Project, including: • disturbance of animals during Project construction, causing them to move away from the area; • habitat fragmentation, limiting animal movement and reducing the size of available habitat areas; • linear disturbances (rights-of-way) improving predator success rates, leading to reduced numbers of prey species such as moose, elk and caribou and increased numbers of bears and wolves; • linear disturbances improving access for hunters, and increasing their success rates due to long lines of sight, adding to hunting pressure on wildlife populations; • construction work on the pipeline bringing increasing numbers of people into the area, adding hunting pressure to wildlife populations; • direct removal of plants during the creation of the Project right-of way; • replacement of native species with non-native species during reclamation; • contamination of plant picking sites due to spraying of herbicides on the pipeline right-of-way or along roads and access routes used for pipeline construction and maintenance; • reduced access to areas due to increased traffic and noise changing the character and safety of an area; • reduced access to large areas of land that are used for cultural activities or teaching areas; • destruction and fragmentation of habitat within the PMT and

	ACCI, leading to a reduction of areas of key importance for teaching, learning, and practicing other cultural activities; • changes in the character and feel of the landscape due to landscape disturbance and increased pressure from traffic and non-Aboriginal hunters, leading to a reduction in the connection SFN members feel towards the land; • reduced opportunities for teaching how to use resources and associated cultural protocols, due to reductions in wildlife populations or contamination or perceived contamination or resources; • cumulative impacts on use and access from other industrial activities in the area adding to the impacts of the proposed Project. SFN confirmed that the identified use and occupation values had not been ground-truthed. SFN stated its members have to travel longer distances to find animals compounding the difficulty for many members to hunt and provide food for their families on a regular basis. In addition to being increasingly difficult to find moose and other wildlife in areas that were once abundant, SFN stated its members report that once they successfully hunt, the quality of meat is compromised, as the animals appear to be unhealthy. SFN expressed concern that the increased presence of non-native hunters is reducing its members' accessibility to land and the availability of wildlife for native hunters, thus impacting the ability of SFN members to exercise their treaty rights. SFN also expressed concerns about the impacts of the proposed Project on water quantity, and on the potential for small creeks and river tributaries drying up and the impacts this loss of water would have on fish, wildlife and plants. SFN raised concerns that burial sites may be located in the vicinity of the Project along the Aitken Creek Section route. ***West Moberly First Nations (WMFN)*** WMFN stated that hunting, fishing, trapping, fishing and gathering, in addition to cultural activities such as singing, drumming, and places where people gather and camp, are traditional activities that occur in the Farrell Creek area and the PMT. WMFN expressed concern regarding declining population and distribution of moose. WFMN stated that non-Aboriginal land uses, such as hunting, in combination with the other land uses (e.g., forestry, pipelines, and a windfarm), negatively impact the traditional land use of WMFN. WMFN expressed concern that increased access as a result of the Project may alter trapping and hunting success for community members.

	WFMN also noted potential noise effects on the practice of gathering plants for sustenance and medicinal purposes, because the areas around such plants require a natural setting. WMFN stated that the sites and locations used to collect medicinal plants are especially sensitive to industrial development, including the construction and operation of a pipeline. WMFN community members raised concerns regarding pesticide and herbicide use and impacts on harvesting wild foods. WMFN stated that the proposed route goes through the ACCI, which includes the PMT, which is an area WMFN has sought to protect from development for several decades. WMFN stated that a major pipeline would create an impetus for further gas development in the ACCI, which is strongly opposed by the community.
Proposed Mitigation	NGTL stated it has proposed a comprehensive suite of mitigation measures to reduce the adverse effects of the Project on the environment and, in turn, on the use of those lands by Aboriginal groups. NGTL has committed to having and implementing a Wildlife Species of Concern Discovery Contingency Plan. NGTL has also committed to monitoring and evaluating the effectiveness of its environmental mitigation during its post construction monitoring program. NGTL has identified a number of mitigation measures to avoid or reduce impacts within the PMT including access control management, and potentially terrestrial HDD under a section of trees near the beginning of the PMT. With respect to the gathering area identified by MNBC, NGTL submitted that this area will be avoided by the current alignment of the Project. NGTL is of the view that with the implementation of these mitigation measures, the Project is not expected to inhibit opportunities for traditional land use activities such as hunting, fishing and trapping. NGTL confirmed registered trappers will be compensated in accordance with provincial requirements and NGTL's Trappers Compensation Plan. NGTL stated that should additional issues of concern, traditional use sites or features identified through ongoing engagement with BRFN be brought forward, they will be considered for incorporation into Project planning, including the EPP and the Environmental Alignment Sheets, as appropriate. NGTL indicated that if any additional Traditional Land Use sites requiring additional mitigation are found on the right-of-way or at a Project facility site during construction, the Company will implement its Traditional Land Use Sites Discovery Contingency Plan. NGTL has developed standard mitigation measures for potential undiscovered archaeological, historical or paleontological resources sites that may be encountered during construction. In the event previously unidentified sites are encountered during construction, NGTL will implement its Heritage Resource Discovery Contingency Plan.

	NGTL committed to continue to engage with potentially affected Aboriginal groups through construction and operation of the Project and will continue to evaluate whether additional mitigation measures are necessary to reduce or avoid effects on TLU.
Proposed Monitoring	NGTL committed to the use of monitors from interested Aboriginal groups to observe construction activities in areas of identified TLU sites.
Views of the Majority of the Board	The Board notes that NGTL continues to work with the Aboriginal groups listed above with respect to obtaining site-specific traditional land and resource use information for the Project area. The Board notes the concerns of BRFN with respect to TLU studies for the Project. In this regard, the Board notes the commitment by NGTL to continue to engage with each potentially affected Aboriginal group to understand the potential effects identified in the TLU reports and determine whether additional mitigation is required. The Board imposes **Condition 7, Appendix II**, requiring NGTL to file for approval, in advance of commencing construction, a report on outstanding TLU investigations for the Project. The Board also notes PRFN's concerns regarding three cultural camps in the area of the Sikanni Chief River crossing. The Board expects NGTL to continue to engage with PRFN to discuss the site-specific details related to these cultural camps. The Board imposes **Condition 10, Appendix II**, requiring NGTL to file a report on its consultations with PRFN regarding potential effects on PRFN traditional land and resource uses at the location of the Sikanni Chief River crossing, including cultural camps. The Board has considered the concerns raised by SFN and WMFN regarding the potential impacts the Project may have on the continued use of the lands and resources in the PMT for their traditional uses and activities. SFN and WMFN stated that the PMT is an area of significance for them, in part because it is an area that has remained relatively undisturbed, and because opportunities to continue their traditional use of the lands and resources have become limited due to increasing development in the region surrounding the PMT. The Board has considered the mitigation measures proposed by NGTL to reduce or eliminate the Project's potential effects on traditional land and resource use in the PMT. The majority of the Board finds that, given the nature and degree of the concerns raised by SFN and WMFN, and the evidence submitted by SFN and WMFN questioning the appropriateness of a route through the PMT, additional measures are required in order to eliminate or minimize, to the extent possible, Project effects on lands and resources within the PMT that may be used for traditional purposes by SFN and WMF. The Board imposes conditions requiring NGTL to file for approval, in advance of commencing construction in the PMT, a Protection Plan for the PMT, along with NGTL's plans for consulting with SFN and WMFN on the development of its Protection Plan and any additional mitigation measures to reduce or eliminate potential Project effects on the use of lands and resources within the PMT. The Board also imposes a condition

<table>
<tr><td></td><td>requiring NGTL to report on the effectiveness of its mitigation measures in the PMT during the operation of the Project (Conditions 11, 12 and 35, Appendix II).

For the portions of the Project that do not cross the PMT (from Kahta to Mackie Creek), the majority of the Board is of the view that, with the measures proposed by NGTL and the Board's conditions, the Project is not likely to cause significant adverse environmental effects on the current use of lands and resources for traditional purposes by Aboriginal people.

For the portion of the Project that crosses the PMT (from Mackie Creek to Saturn), the majority of the Board is of the view that, with the measures proposed by NGTL and the Board's conditions, the Project is not likely to cause significant adverse environmental effects on the current use of lands and resources for traditional purposes by Aboriginal people.</td></tr>
<tr><td>Views of Member Parrish</td><td>For the reasons set out in Chapter 7, Member Parrish is of the view that, for the portion of the Project that crosses the PMT, the Project is likely to cause significant adverse environmental effects on the current use of lands and resources for traditional purposes by Aboriginal people that are not justified in the circumstances.

For the remainder of the Project that does not cross the PMT, Member Parrish is of the view that, with the measures proposed by NGTL and the Board's conditions, the Project is not likely to cause significant adverse environmental effects on the current use of lands and resources for traditional purposes by Aboriginal people.</td></tr>
<tr><td>Majority of the Board's Evaluation of Significance of Residual Effects</td><td><table>
<tr><td>Frequency</td><td>Duration</td><td>Reversibility</td><td>Geographical Extent</td><td>Magnitude</td></tr>
<tr><td>Single to Multiple</td><td>Short term- to medium-term</td><td>Possible</td><td>PDA, LAA</td><td>Low to Moderate</td></tr>
<tr><td colspan="5">Adverse Effect</td></tr>
<tr><td colspan="5">Not likely to cause significant adverse environmental effects</td></tr>
</table></td></tr>
<tr><td>Member Parrish's Evaluation of Significance of Residual Effects for the portion of the Project that crosses the PMT</td><td><table>
<tr><td>Frequency</td><td>Duration</td><td>Reversibility</td><td>Geographical Extent</td><td>Magnitude</td></tr>
<tr><td>Continuous</td><td>Long-term</td><td>Irreversible</td><td>RAA</td><td>Moderate</td></tr>
<tr><td colspan="5">Adverse Effect</td></tr>
<tr><td colspan="5">Likely to cause significant adverse environmental effects that are not justified in the circumstances.</td></tr>
</table></td></tr>
</table>

9.6 Cumulative Effects Assessment

The assessment of cumulative effects considers the impacts of the residual effects associated with the Project in combination with the residual effects from other projects and activities that have been or will be carried out within the appropriate temporal and spatial boundaries and ecological context.

Views of NGTL

NGTL identified past activities contributing to cumulative effects within the region to include transportation activities, forestry, oil and gas activities, utilities, and rural residential development. Known future developments in the region include oil and gas development (wells, pipelines and facilities) adjacent to the proposed pipeline as well as transportation activities, forestry, utilities, and residential infrastructure.

Adverse residual effects from the Project were identified for the following valued environmental and socio-economic components (VC): vegetation and wetlands, wildlife and wildlife habitat, water quality, fish and fish habitat, atmospheric environment, acoustic environment, human occupancy and resource use, and traditional land and resource use.

Views of Participants

Blueberry River First Nations (BRFN)

BRFN stated that additional to Project-specific impact concerns, there is an underlying cumulative effects context that BRFN territory and BRFN's rights and interests have been subject to long-term, multi-source, and large scale adverse cumulative effects through land fragmentation and other industrial effects.

Prophet River First Nation (PRFN)

PRFN stated that they have serious concerns about their continued ability to use land affected by the proposed Project, because the Project, in combination with other adverse cumulative effects in the proposed Project area, has reduced the land base available to PRFN members to continue to exercise their Treaty rights.

Saulteau First Nations (SFN)

SFN submitted that the cumulative effects of industrial development in the Peace Region are adversely affecting the ability of SFN members to exercise their aboriginal and treaty rights in the manner consistent with the spirit and intent of Treaty 8.

Views of the Board

The Board is of the view that most of the cumulative effects are limited to the duration of construction, are fairly localized and minor in nature and will be mitigated by NGTL's measures.

However, the key long-term cumulative environmental impact is the ongoing loss, alteration and fragmentation of the natural landscape in the region, particularly for caribou. While the changing land use has a number of incremental cascading effects, the Board finds caribou and caribou habitat an appropriate overall indicator for the assessment of cumulative effects. The methodology and approach to cumulative effects assessment is discussed in subsection 9.6.1 followed by a discussion on cumulative effects specific to caribou and caribou habitat in

subsection 9.6.2. The issue of cumulative effects on traditional land use was discussed in detail in subsection 9.5.4.

9.6.1 Methodology and Approach

The Filing Manual states that the level of effort and scale of the cumulative effects assessment should be appropriate to the nature and context of the Project under assessment, and that an increased level of detail may be required where rapid or intensive development of the region has occurred or is anticipated, or particular environmental or socio-economic sensitivities or risks are involved.

Views of NGTL

Screening Method

In assessing cumulative effects, NGTL applied a three part screening process to each VC to determine if, in its view, there was a reasonable expectation that the Project would contribute to cumulative effects. The screening process consisted of the following three considerations:

1) Is there a residual effect as a result of the Project?
2) Does the residual effect overlap spatially and temporally with those of other past, present or reasonably foreseeable future projects?
3) Is there a reasonable expectation that the contribution (i.e., addition) of the Project's residual effects would cause a change in cumulative environmental effects that could affect the quality or sustainability of the VC, and therefore require further assessment?

NGTL stated that while the potential for the Project to contribute to cumulative effects was initially considered for all Project-related residual effects, the three part screening process that it applied included evaluating the need to pursue further quantitative cumulative effects assessment.

Future Development Scenario

The Board requested a linear disturbance analysis based on the development of the future wells in the North Montney area that underpin the Project. In its response, NGTL modelled a linear density analysis based on a number of assumptions. NGTL emphasized that it does not have any specific knowledge of how upstream development in the North Montney region will occur over the next several decades, that it does not have control of the planning, approval or development of the North Montney Play, and as such the results are not an accurate prediction of cumulative effects and should only be assessed as part of a high-level, qualitative discussion. NGTL also expressed concerns that the Board's request appeared contrary to Canadian Environmental Assessment Agency guidance on cumulative effects assessment, appeared contrary to the Board's Filing Manual in that it appeared to be scoping in the upstream gas development, and noted BC's regulatory regime for upstream development.

Regional Planning

NGTL stated that the Board should rely on the regulatory regime in BC, which will ensure that all upstream developments are appropriately evaluated (including for cumulative effects) and regulated by the provincial authorities who are responsible for managing the Province's resources. There are also regional cumulative effects initiatives in northeast BC, which NGTL will participate in as appropriate. NGTL further noted that the BCOGC is implementing an Area Based Analysis into its permitting process for all oil and gas activities and infrastructure. This will incorporate landscape-level analyses into permitting decisions to ensure environmental and social objectives are maintained. To the extent

that broader regional developments were too far removed from the Project to be assessed in the ESA, the effects of these activities will be appropriately assessed through the applicable provincial and other federal regulatory processes.

Views of Participants

Blueberry River First Nations (BRFN)

BRFN stated that the cumulative effects assessment undertaken by NGTL was insufficient to inform an assessment of impacts on BFRN rights.

Fort Nelson First Nation (FNFN)

FNFN stated that NGTL has not properly considered the cumulative impacts of the Project, and neither the provincial nor federal Crown has assessed the cumulative impacts of induced gas development in FNFN territory.

Prophet River First Nation (PRFN)

PRFN stated that NGTL's cumulative effects assessment was inadequate and should be considered unreliable.

West Moberly First Nations (WMFN)

WMFN stated that the method used by NGTL which is based on screening out impacts summarily without fully assessing the interaction between residual effect and other impacts, underestimates the scale and significance of cumulative effects associated with the Project.

Views of the Board

The Board has a number of concerns with the third part of NGTL's three part screening process used for assessing cumulative effects. The Board is concerned that this is not an accepted method and with the apparent absence of support for it in any independent or peer reviewed scientific literature. The Board is concerned that this method presupposes the outcome that is intended to be achieved in conducting a cumulative effects analysis, and does so with only subjective judgment. The Board is also concerned that there is no description, let alone a rigorous or defensible one, of how the "viability" or "sustainability" of any particular Valued Component (VC) is measured or defined. Finally, the Board does understand that an individual project's contribution may be small, but notes that the point of a cumulative effects assessment is precisely to give some consideration to the cumulative effect of multiple small incremental contributions.

The Project relies upon considerable additional development of gas wells in the North Montney area to provide supply and to justify the Project design and its economic feasibility, yet NGTL limited its cumulative effects assessment to activities that are currently within the regulatory process as reasonable future projects. Although much of the forecast development will fall under provincial regulation, without it, the Board would not have sufficient detail to assess the Project.

The Board's Filing Manual guidance states that a cumulative effects assessment:

> *must at a minimum, include... other related project or activity development assumptions that support and are consistent with the long term economic or financial assumptions made in the application, even if formal plans or applications have not yet been made.*

It is inconsistent for a proponent to rely on certain assumptions to justify a project application under the NEB Act and then suggest these assumptions should not be considered when it comes to cumulative effects. The Board has a public interest mandate under the NEB Act that is not limited to that of the CEA Act or its guidance. The Board cannot ignore what is on its record; a proponent cannot suggest supply exists to justify the need for its proposed pipeline and for the economic feasibility and engineering design, and then suggest the development of the supply is hypothetical for environmental impacts. It is reasonable for the Board to assume that if a pipeline, as it is proposed, were to be built, then the supply for it will likely be developed. The extent to which an applicant must consider the effects associated with other future physical facilities and activities and the depth of analysis will depend upon the relative contribution of the applied-for project to the predicted cumulative effects.

The Board recognizes the challenges and uncertainties associated with this type of analysis, but expects applicants to use the best available information or undertake additional work to assess the potential effects. The Board does not expect the specific details of development, which are admittedly unknown, to be provided, but it does expect project proponents to provide some reasonable assumptions. After reviewing the additional modelling assumptions and analysis provided by NGTL, the Board found it to reflect a reasonable model of potential trends.

The Board is aware of concerns over cumulative effects in the region and appreciates that a regional plan would be highly beneficial in addressing these. The Board also recognizes the need for established acceptable thresholds of change, which can be used for subsequent project-specific assessments in the same geographic region. The Board recognizes that this approach would not only require larger spatial boundaries and many years to complete, it ideally should also be done prior to further development in the region. Throughout the process, NGTL referred to the BCOGC's Area Based Analysis initiative and other potential initiatives from other agencies. NGTL also affirmed its inclination to participate in such initiatives should a formal invitation be received. The Board is aware of the responsibilities of the BCOGC in regulating future activities in the North Montney region. The Board encourages BCOGC to continue developing the Area Based Analysis program and to expedite its implementation. The Board recognizes that NGTL does not control the development of provincial or federal initiatives. However the Board expects NGTL to make every effort to involve itself in any such opportunities where possible and constructively participate towards finding solutions in managing regional cumulative effects.

9.6.2 Caribou and Caribou Habitat

The Project traverses through two Woodland Caribou ranges for which the linear feature density threshold of 1.2 km/km^2 is already exceeded with existing development for both the Graham and Pink Mountain caribou herds (1.78 and 3.07 km/km^2 respectively).

Views of NGTL

In its ESA, NGTL calculated that the Project adds 0.01 and 0.003 km/km^2 to the density of linear features for the Pink Mountain and Graham caribou herds, respectively for caribou herd ranges within the RAA. Planned development (including the Project) will contribute 0.01 km/km^2 over existing development to linear density within the Pink Mountain herd, and 0.02 km/km^{2}to linear density within the Graham herd. The planned development contribution to linear density for the Pink Mountain herd is entirely attributable to the Project. NGTL believes that with the application of standard mitigation,

access control, and the Caribou Mitigation Plan, the Project's contribution to effects on mortality risk are expected to be minimal.

With respect to offset measures, NGTL noted that the focus of the Recovery Strategy is on avoiding impacts to critical habitat and NGTL accepts that offsets should be considered if an activity impacts designated critical habitat. NGTL claims, however, that requiring offsets even for species only listed as Special Concern under SARA, such as the Pink Mountain caribou herd, would be inconsistent with SARA and provincial offsetting policies. NGTL indicated that it would accept a condition requiring offsets for residual impacts of the Project that are determined to be critical caribou habitat.

Views of Participants

West Moberly First Nations (WMFN)

WMFN submitted that the Project will further contribute to already significant adverse cumulative effects on caribou and traditional land use practices.

Environment Canada

EC stated that the spatial identification of critical habitat in the Recovery Strategy for the Graham local population unit is incomplete and it is extremely likely that additional critical habitat will be identified, particularly in the unit's lower elevations and within a timeline that could overlap with the Project's approval and construction.

Given that the Recovery Strategy identifies pipeline activities as likely to destroy critical habitat and the Project would be located within the Graham local population unit, EC concluded there is the potential that the Project may result in the destruction of critical habitat.

Views of the Board

The Board is concerned about the impacts of projects on caribou and caribou habitat, and considers caribou habitat an appropriate indicator of landscape level cumulative impacts, as previously noted in GH-2-2011, GH-4-2011 and GH-001-2012.

In this case however, the Board notes some key differences that influence what mitigation is appropriate. The Board notes that for a species of special concern such as the Pink Mountain herd, the SARA does not require EC to prepare a Recovery Strategy nor identify critical habitat. Instead it requires EC to develop a Management Plan, which has been done. The Board expects NGTL to adhere to any applicable guidance within that Management Plan, and while the Board remains concerned with the potential for residual effects that could contribute to cumulative effects; it also understands the significance of having different levels of protection. The Board is of the view that with the implementation of the mitigation measures and conditions in subsection 9.6.4.4, and in consideration of the Management Plan, offset measures for the Pink Mountain herd are not required.

As for the Graham herd, which is threatened under SARA, and in consideration of the applicable Recovery Strategy, the Board remains of the view expressed in its previous decisions that any residual effects on critical habitat should be fully compensated for, with the goal of no net loss of critical habitat. In addition to the mitigation measures and conditions in subsection 9.6.4.4, the Board imposes **Condition 36 (Appendix II)** requiring an Offsets Measures Plan (OMP) for residual impacts to caribou critical habitat. The Board notes that identification of critical habitat in the Recovery Strategy has not been completed and it is likely that additional critical habitat will be identified in the near future. As such, the OMP shall be filed before requesting leave to

open and shall include the refinements to critical habitat mapping in the Recovery Strategy. Should EC's critical habitat mapping updates result in no identification of further critical habitat that overlaps the Project RoW at least 90 days prior to leave to open, then offsets would not be required. Further, the Board imposes **Condition 37 (Appendix II)** requiring NGTL to develop a program to monitor and verify the effectiveness of those offset measures, and **Condition 38 (Appendix II)** requiring NGTL to report on that monitoring.

9.7 Follow-up Program

The CEAA 2012 requires a follow-up program to verify the accuracy of the EA and determine the effectiveness of measures to mitigate adverse project effects. In considering which environmental effects are the most contentious and may warrant more in depth or rigorous and scientific follow up (above and beyond standard post-construction monitoring) to constitute CEAA follow up, the Board imposes **Conditions 37 and 38 (Appendix II)** to be implemented as a follow-up program. Please refer to section 9.5.4.4 for more information.

9.8 Environmental Assessment Recommendation

The majority of the Board is of the view that overall, with the Board's imposed conditions and with the implementation of NGTL's environmental protection procedures and mitigation, the Project is not likely to cause significant adverse environmental effects.

Table 9-6: Criteria, Ratings and Definitions Used in Evaluating the Likelihood of Significant Effects

Criteria	Rating	Definition
All criteria	Uncertain	When no other criteria rating descriptor is applicable due to either lack of information or inability to predict.
Frequency (how often would the interaction occur that caused the effect)	Accidental	Rare and unplanned occurrence over the Project lifecycle.
	Single	One time occurrence within any one phase of the Project lifecycle.
	Clustered	Multiple occurrences within a single timeframe or location.
	Multiple	Multiple occurrences, whether during one phase of the Project lifecycle or over many phases.
	Continuous	Continuous through any phase of the Project lifecycle.
Duration (duration of the effect)	Short-term	Adverse environmental effect duration is in the order of months or limited to the proposed construction.
	Medium-term	Adverse environmental effect duration is in the order of a few years.
	Long-term	Adverse environmental effect would remain evident throughout the planned operation or beyond the lifecycle of the Project.

Reversibility	Reversible	Adverse environmental effect expected to return to baseline conditions within the life of the Project.
	Possible	Adverse environmental effect may or may not return to baseline conditions within the life of the Project.
	Irreversible	Adverse environmental effect would be permanent, or would last in the order of a few generations.
Geographic Extent	Project Development Area (PDA)	Effect would be limited to the area directly disturbed by the Project development, including the width of the RoW and the TWS.
	Local Assessment Area (LAA)	Effect would generally be limited to the area in relation to the Project where direct interaction with the biophysical and human environment could occur as a result of construction or reclamation activities. This area varies relative to the receptor being considered.
	Regional Assessment Area (RAA)	Effect would be recognized in the area beyond the Local Assessment Area, or similar term used above that might be affected on the landscape level. This area also varies relative to the receptor being considered.
Magnitude	Low	Effect is negligible, if any; restricted to a few individuals/species or only slightly affects the resource or parties involved; and would impact quality of life for some, but individuals commonly adapt or become habituated, and the effect is widely accepted by society.
	Moderate	Effect would impact many individuals/species or noticeably affect the resource or parties involved; is detectable but below environmental, regulatory or social standards or tolerance; and would impact quality of life but the effect is normally accepted by society.
	High	Effect would affect numerous individuals or affect the resource or parties involved in a substantial manner; is beyond environmental, regulatory or social standards or tolerance; and would impact quality of life, result in lasting stress and is generally not accepted by society.
Evaluation of Significance	Likely to be significant	Effects that are either: (1) of high magnitude; or (2) continuous, long-term, irreversible, and of RAA geographic extent.
	Not likely to be significant	Any adverse effect that does not meet the above criteria for "significant".

Chapter 10

Infrastructure, Employment and Economy

The Board's expectations for an applicant regarding direct socio-economic impacts caused by the existence of the project are set out in the Board's Filing Manual. Applicants are expected to identify and consider the impacts a project may have on infrastructure, services, employment and economy. Applicants are also expected to provide mitigation of negative impacts and the consideration of positive benefits of the project.

Potential socio-economic effects that are caused by changes to the environment are included in Chapter 9, Environment and Socio-Economic Matters. Direct socio-economic effects caused by the existence of the Project itself are discussed below.

Views of NGTL

NGTL indicated that during construction, the transportation of goods, services and workers could lead to the increased use of transportation infrastructure, including increased traffic on Highway 29, approximately 40 km west of Fort St. John, and Highway 97, which extends through central and northern BC.

NGTL submitted that Project-related traffic volume increases would be managed by mitigation outlined in its Traffic Control Management Plan, such as vehicular use on the Right of Way (RoW), following applicable traffic, road use, and safety regulations, and using multi-passenger vehicles to transport workers from temporary lodging to the Project sites.

NGTL stated it would use trenchless methods where feasible to reduce disruption to existing transportation infrastructure, such as roads and rail, to minimize possible Project impacts. NGTL further stated it would provide Project information to local governments, communities and service providers so they can prepare for potential additional demands on services.

NGTL stated the City of Fort St. John raised concerns related to traffic management, including concerns that Project-related traffic impacts cannot be addressed by the standard mitigation measures described in the Company's Traffic Control Management Plan. NGTL committed to undertake additional discussions with its prime contractor to refine and optimize the Traffic Control Management Plan.

NGTL stated that the anticipated temporary increase in the regional population as a result of direct Project employment will be between 2,055 and 2,470 individuals. NGTL indicated that during construction, the presence of workers in communities affected by the Project has the potential to increase the demand for housing and local community services and infrastructure, such as water, sewer, waste, healthcare, transportation and emergency services.

NGTL noted that Project-related demand for recreational activities will be minimal and is unlikely to add substantially to current levels of use. This is a result of the short duration that workers will reside near any one community, as well as the structure of the work shifts (12 hours for 6 days a week), which will further limit the need for workers to use infrastructure and services within communities affected by the Project.

In addition, NGTL stated that there is a variety of temporary accommodations in Dawson Creek, totaling more than 1000 rooms, as well as more than 500 campsites and RV accommodations. NGTL stated it

will mitigate incremental demands on community infrastructure and services by housing its construction workforce in self-contained camps.

NGTL submitted that the Project is expected to result in positive impacts on local, regional, provincial and national economies through positive residual economic effects related to contract procurement, employment and government revenues.

NGTL estimated that it will spend approximately $876 million on services and associated subcontracts, with most of these expenditures occurring in BC.

NGTL stated that as a result of construction, Federal taxes attributable to direct and indirect economic effects are estimated at $161 million, while Provincial tax revenue is estimated at $135 million Canada-wide. The Company also estimated Federal revenue from induced economic activity arising from construction of the Project at $62 million, with estimated Provincial tax revenue from induced economic activity at $58 million. NGTL estimated that once the Project is operational it will pay approximately $8 million in property taxes to the Peace River Regional District. The Company stated Project effects on local government financial resources during the operations phase is anticipated to be positive, with an estimated $7.2 million in annual municipal tax payments.

NGTL stated Canada-wide employment during construction is estimated at 4,077 full-time equivalents (FTEs), with most direct jobs occurring in British Columbia, where most of the construction activity will occur, and in Alberta, where it is anticipated that most professional services as well as NGTL's construction management and administration will be based. The Company also stated indirect employment, which consists of employment associated with Project suppliers and contractors, is estimated at 3,977 FTEs. NGTL stated that while most indirect employment is anticipated to occur in Western Canada, suppliers from other provinces, particularly Ontario and Quebec, are also predicted to participate in the Project. The Company stated that induced employment, which is generated from consumer and household spending of workers employed directly or indirectly by the Project, is estimated at a further 4,163 FTEs.

NGTL indicated that it has identified the Aboriginal communities within close proximity to the Project that have capacity to provide contracting services.

NGTL submitted that it continues to discuss opportunities related to contracting and employment with Aboriginal communities, and that there are variations in the skills and business capacity of different Aboriginal communities. The Company stated the capacity of these communities has been incorporated into Project planning. NGTL confirmed that for qualified Aboriginal businesses and Aboriginal partnerships, it has designated the following activities: camps and catering services, right of way clearing and hauling, medical services and security services. NGTL also submitted that it is in a partnership with the North East Native Advancing Society Innovative Learning Centre and that this partnership supports the development and delivery of training programs for Northeast British Columbia Aboriginal community members.

NGTL further submitted that it also works with its prime contractors to facilitate the employment of individuals from Aboriginal communities in proximity to the Project including identifying opportunities for on-the-job training. NGTL noted that on previous similar projects it has achieved Aboriginal participation rates of 10% to 15% of the construction workforce. NGTL stated that it estimates that $33 million will be awarded in contracts to qualified Aboriginal businesses and Aboriginal partnerships on the Project.

NGTL submitted that it has a community investment program which focuses on civic investment, education, environment, health and human services, and that it is committed to supporting Aboriginal-

specific community investment initiatives. These include support for youth and elders' gatherings, computers in schools and fundraising for seasonal community events.

Views of Participants

Prophet River First Nation (PRFN)

PRFN questioned NGTL about the efforts it made to engage PRFN in exploring economic opportunities.

Saulteau First Nations (SFN)

SFN asked NGTL about short and long term economic participation opportunities. SFN enquired about funding and capacity building for its members that would secure employment during the construction and operations of the Project, the methods it would use to encourage prime contractors to maximize local Aboriginal participation through employment and subcontracting opportunities. SFN also enquired about how NGTL will determine the level of benefits that will be made to any particular First Nation or Aboriginal group.

West Moberly First Nations (WMFN)

WMFN expressed concerns relating to its members potentially being hired to work on the proposed Project, given that the community is far from the Project site. WMFN requested a description of long term jobs NGTL has made available to its members, and how it has enhanced long term employment opportunities for community members. WMFN also enquired about Project-specific long term revenue sharing in relation to the Project.

Views of the Board

The Board is satisfied that NGTL has identified and considered all relevant socio-economic aspects of the Project, and has proposed suitable mitigation to address the Project's potential socio-economic effects.

The Board notes NGTL's commitments to provide contracting and procurement opportunities to qualified local and Aboriginal businesses during construction, and for the employment of local and Aboriginal workers whenever possible. The Board notes the importance of realizing economic benefits to local and Aboriginal communities. The Board also notes that NGTL's community investment program applies to this Project. To be satisfied that NGTL's commitments can be effectively implemented, the Board imposes conditions requiring NGTL to provide the Board with Construction Training and Education Monitoring Reports, and Employment, Contracting and Procurement Monitoring Reports **(Conditions 8 and 9, Appendix II; Conditions 7 and 8, Appendix III)**.

The Board also notes NGTL's submission of plans to address the Project's socio-economic impacts, including a Traffic Control Management Plan which it committed to revise. The Board imposes **Condition 6, Appendix II** requiring NGTL to file its revised Traffic Control Management Plan, which would be submitted to the Board prior to the start of construction.

In light of the measures outlined in NGTL's Application, subsequent filings and the above-noted conditions, the Board finds that the Project's impacts on infrastructure and services would be adequately addressed. The Board also finds that the proposed Project would provide benefits to Aboriginal, local, regional and provincial economies and that any adverse socio-economic

impacts of the Project would be adequately addressed. NGTL provided evidence of federal, provincial and municipal revenues from the direct and indirect economic effects of the construction and operation of this Project. NGTL also provided evidence on the direct, indirect and induced economic effects resulting directly from hiring and expenditures associated with the construction and operation of this Project. To the extent that this evidence relates to economic benefits that are created by projects or activities upstream or downstream of this Project, the Board puts no weight on that evidence, as it is not directly related and relevant to the Project. Any economic effects from projects or activities not directly related to the pipeline, such as upstream drilling activities or downstream sale or use of product, were not considered by the Board in its assessment of the economic and socio-economic effects of the Project. Only those effects that are related to the Project itself were considered.

Chapter 11

Section 58 Facilities

11.1 Application for the Section 58 Facilities

In its Application for the proposed Project, NGTL requested an exemption order under subsection 58(1) of the NEB Act from the requirements of subsections 31(c), 31(d) and 33 in relation to the proposed temporary infrastructure required in advance of, and during construction of the Project.

Views of NGTL

NGTL stated that temporary infrastructure would be required in advance of and during construction of the Project, including stockpile sites, laydown areas, borrow pits/dugouts, contractor yards and construction camps.

NGTL submitted it will use existing disturbed areas, where available and practical, for temporary infrastructure sites, and that new or expanded sites will be developed near the Right of Way (RoW) or along existing roads and railway sidings.

In its Application, NGTL originally planned for three new 400 to 700-person temporary construction camps. NGTL subsequently stated that as it did not expect to have sufficient time to prepare new camp sites in advance of the peak nesting period for migratory birds, it considered alternative options for worker accommodations, including the use of previously cleared camp sites and permitted third-party camps. NGTL's amended approach would be to identify locations in very close proximity to the pipeline, and to not further impact the use of roads and local municipalities. NGTL stated that these changes to its plans for workforce accommodation did not impact the conclusions in the ESA.

NGTL stated that its consultation for the Project with all potentially affected stakeholders included consultation regarding all proposed Section 58 activities. NGTL stated it provided summary information describing the section 58 RoW preparation plan to all Aboriginal communities in April 2014, and did not received any feedback regarding this plan.

Views of the Majority

With respect to its regulatory decisions under the NEB Act and the *Canadian Environmental Assessment Act 2012*, the Board conducted an assessment of the environmental and socio-economic effects of the Project in Chapter 9 of this Report. This assessment included the Section 58 Facilities. The majority of the Board determined that, with the implementation of NGTL's environmental protection procedures and mitigation measures, and the Board's recommendations, the Project is not likely to cause significant adverse environmental effects.

The Board notes that there were no outstanding concerns from those whose lands may be affected by the location of the Section 58 Facilities.

The majority of the Board has decided that it is in the public interest to approve the Section 58 Facilities. The Board issued Order XG-N081-010-2015 (Appendix III), approving the Section 58 Facilities and exempting NGTL from subsections 31(c), 31(d), and section 33 of the NEB Act, subject to conditions, pursuant to section 58 of the NEB Act. As a result, NGTL is

exempted from the requirement to file a plan, profile, and book of reference for the Section 58 Facilities.

The Board is of the view that the Order is necessary only if the Governor in Council directs the Board to issue a Certificate in respect of the Section 52 Facilities. Consequently, pursuant to subsection 19(1) of the NEB Act, the Board has decided that this Order takes effect only upon the issuance of a Certificate in respect of the Section 52 Facilities.

Views of Member Parrish, dissenting in part

For the reasons set out in Chapter 7, to the extent that temporary infrastructure falls within the Mackie Creek to Saturn portion of the Project, I dissent from the majority's decision, under section 58, to grant an exemption Order for those facilities.

My view is that the Board should not make any decision that has the effect of authorizing the construction and operation of the pipeline or any related works or facilities, temporary or otherwise, within the Mackie Creek to Saturn portion of the Aitken Creek Section of the Project.

Appendix I

List of Issues

The Board considered the following issues in this hearing:

1. The need for the proposed Project.
2. The economic feasibility of the proposed Project.
3. The potential commercial impacts of the proposed Project.
4. The appropriate tolling methodology.
5. Standards for determining the recovery of costs to provide service on the proposed Project.
6. The potential environmental and socio-economic effects of the proposed Project, including those to be considered under the *Canadian Environmental Assessment Act, 2012*.
7. The appropriateness of the general route and land requirements for the proposed Project.
8. The engineering design and integrity of the proposed Project.
9. Potential impacts of the proposed Project on Aboriginal interests.
10. Potential impacts of the proposed Project on landowners and land use.
11. Contingency planning for spills, accidents or malfunctions, during construction and operation of the Project.
12. The terms and conditions to be included in any approval or recommendation.

Appendix II

Section 52 Certificate Conditions

In these conditions, where any condition requires a filing with the National Energy Board (Board or NEB) "for approval", NGTL must not commence that action until the approval is issued by the Board.

In this document, the terms or expressions below (in bold) have the following meaning:

Commencing construction - the clearing of vegetation, ground-breaking and other forms of right-of-way (RoW) preparation that may have an impact on the environment (activities associated with normal surveying do not constitute commencing construction).

Section 52 Facilities – NGTL's proposed construction and operation of the North Montney Mainline, a new 1067 mm nominal pipe size (NPS 42) outside diameter sweet natural gas pipeline totaling approximately 301 km in length, and its related facilities which include 3 compressor stations, 16 meter stations and associated facilities.

Certificate – The Certificate of Public Convenience and Necessity, applied-for pursuant to section 52 of the *National Energy Board Act* (NEB Act), authorizing the construction and operation of the Section 52 Facilities.

Certificate Conditions

General

1. Condition Compliance

NGTL shall comply with all of the conditions contained in this Certificate, unless the Board otherwise directs.

2. Engineering

NGTL shall cause the approved Section 52 Facilities to be constructed and operated in accordance with the specifications, standards and other information referred to in its Application, or as otherwise agreed to during questioning and in its related submissions.

3. Implementation of Environmental Protection

NGTL shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations and procedures for the protection of the environment included in or referred to in its Application, or as otherwise agreed to during questioning and in its related submissions.

Prior to Commencing Construction

4. Project Confirmation and Contractual Commitments

NGTL shall file with the Board, **at least 60 days prior to commencing construction**, a confirmation, by an officer of the Company, that:

a) Progress Energy Canada Ltd. has made a positive final investment decision on the proposed Pacific Northwest LNG Project;

b) TransCanada is proceeding with construction of the Prince Rupert Gas Transmission pipeline; and

c) The Progress Delivery Project Expenditure Authorization and associated Service Documents for FT-D delivery service at the Mackie Creek Interconnection continues to be in effect for the quantity of 2340 terajoules per day as detailed in Section 3 of NGTL's Application.

5. Heritage Resources

NGTL shall file with the Board, **at least 30 days prior to commencing construction:**

a) for each of the Aitken Creek and Kahta Sections, copies of all archaeological and heritage resource permits and clearances obtained from the BC Archaeology Branch; and

b) a statement on how NGTL intends to implement any recommendations contained in the permits and clearances referred to in a) above.

6. Traffic Control Management Plan

NGTL shall file with the Board, **at least 60 days prior to commencing construction**, a final Traffic Control Management Plan specific to the Section 52 Facilities. This plan shall include, but not be limited to:

a) a summary of any issues or concerns raised by municipalities and regional authorities; and

b) a description of how these issues and concerns are addressed in the Traffic Control Management Plan.

7. Outstanding Traditional Land Use Investigations

NGTL shall, **at least 60 days prior to commencing construction**, file with the Board for approval, and send copies to the Aboriginal groups included in consultation activities, a report outlining a plan for outstanding traditional land use (TLU) investigations for the Section 52 Facilities. The report must include, but not be limited to:

a) a summary of the status of TLU investigations undertaken for the Section 52 Facilities, including Aboriginal group-specific TLU studies or planned supplemental surveys;

b) a description of how NGTL has considered and addressed information from any TLU investigations that it did not report on during the GH-001-2014 proceeding;

c) a description of any outstanding concerns raised by potentially-affected Aboriginal groups regarding potential effects of the section 52 Facilities on the current use of lands and resources for traditional purposes, including a description of how these concerns have been or will be addressed by NGTL; and

d) a summary of any outstanding TLU investigations or follow-up activities that will not be completed prior to commencing construction, including an estimated completion date, if applicable, and a description of how NGTL has already identified, or will identify, any potentially-affected TLU sites or resources if the outstanding investigations will not be completed prior to construction.

8. Employment, Contracting and Procurement Monitoring Reports

NGTL shall file with the Board, at least 30 days prior to commencing construction, and every 180 days thereafter until completion of construction, monitoring reports on employment, contracting and procurement of Aboriginal groups, businesses and individuals for the construction of the Section 52 Facilities. The reports must include:

a) a summary of the total employment, contracting and procurement of Aboriginal groups, businesses and individuals for construction of the Section 52 Facilities during the reporting period, including:

   i) the number of Aboriginal individuals employed and a summary description of the types of positions filled by Aboriginal employees during the reporting period;

   ii) a summary description of the contracts awarded to or executed with Aboriginal groups, businesses or individuals during the reporting period, and the total monetary values of these;

   iii) a summary description of procurement awarded to Aboriginal groups, businesses, or individuals during the reporting period, and the total monetary value of these; and

   iv) a comparison of the totals and values described in i) through iii) above in relation to NGTL's stated commitments for employment, contracting and procurement of Aboriginal groups, businesses and individuals for the construction of the Section 52 Facilities; and

b) a summary of NGTL's consultation with Aboriginal groups for the Project, businesses or representatives regarding employment, contracting and procurement for the reporting period, including any issues or concerns raised and how NGTL has addressed or responded to them.

NGTL shall file with the Board, within three months of completion of construction, and provide a copy to all affected Aboriginal groups, a final report on employment, contracting and procurement of Aboriginal groups, businesses and individuals during the construction phase.

On or before 31 January after each of the first, third, fifth years following the commencement of operation of the Section 52 Facilities, NGTL shall file with the Board, and provide copies to all affected Aboriginal groups, reports on employment, contracting and procurement regarding the Section 52 Facilities of Aboriginal groups, businesses and individuals for the Project, during each reporting period.

9. Construction Training and Education Monitoring Reports

NGTL shall file with the Board, at least 30 days prior to commencing construction, and every 180 days thereafter until completion of construction, monitoring reports for the implementation and outcomes of training and education initiatives and opportunities provided to Aboriginal groups and individuals for the Project.

The reports must include:

a) a description of each training and education initiative and opportunity implemented during the reporting period, including duration, participant groups, delivery agency or institution, and intended outcomes;

b) a description of any measures identified to address or meet the terms or commitments; and

c) a summary of NGTL's consultation with relevant Aboriginal groups or representatives, government sponsors, industry associations, and delivery agencies or institutions regarding training and education initiatives and opportunities for the reporting period, including any issues or concerns raised and how NGTL has addressed or responded to them.

NGTL shall file with the Board, within three months of completion of construction, and provide copies to all affected Aboriginal groups, a final report on training and education initiatives and opportunities for Aboriginal groups and individuals during the construction phase.

On or before 31 January after each of the first, third, fifth years following the commencement of operation of the Section 52 Facilities, NGTL shall file with the Board, and provide copies to all affected Aboriginal groups, reports on training and education initiatives and opportunities provided to Aboriginal groups and individuals for the Project, during each reporting period.

10. Report on Consultations with Prophet River First Nation

NGTL shall file with the Board, at least *30 days* prior to commencing construction at the Sikanni Chief River crossing location, a report on consultation activities with Prophet River First Nation (PRFN) regarding any measures to reduce, eliminate or offset potential Project effects on traditional land and resource use sites and activities, including culture camps, identified near the Sikanni Chief River crossing location. The report must include, but not be limited to:

a) a summary of the consultation activities undertaken, including:

   i) the methods, dates and locations of consultation activities;

   ii) a summary of the comments and concerns raised or information provided by PRFN;

   iii) a summary of NGTL's response to all of the comments and concerns raised or information provided;

iv) a summary of any outstanding concerns about the Project's potential effects raised by PRFN, any steps that will be taken to address these outstanding concerns, or an explanation why no further steps are required; and

v) a description of the resources provided to PRFN that supported its participation in consultation activities; and

b) for Board approval, a summary of the assessment of the Project's potential effects on any traditional land and resource use sites or activities identified at the Sikanni Chief River crossing location, including:

i) a description of any traditional land and resource sites or activities, including culture camps, that may be affected by the river crossing location and associated construction, reclamation or operation activities;

ii) a description of the measures identified to reduce, eliminate or offset potential Project effects on identified traditional land and resource use sites or activities; and

iii) a description of how any concerns raised or information provided by PRFN on are addressed by or incorporated into the measures identified to reduce, eliminate or offset potential Project effects on identified traditional land and resource use sites or activities.

11. Peace Moberly Tract Protection Plan (PMTPP)

Construction in the Peace Moberly Tract (PMT) shall not commence until NGTL has received approval of its PMTPP by the Board.

NGTL shall file with the Board for approval, at least 60 days prior to commencing construction in the PMT, a PMTPP. The plan shall include, but not be limited to, the following:

a) the goals and measureable objectives of the PMTPP;

b) an identification and rationale of biophysical and socio-economic elements to be included in the PMTPP;

c) a description of mitigation measures proposed to eliminate or reduce any potential effects on the biophysical and socio-economic elements identified in b) within the PMT; including, but not limited to the following:

i) the hierarchy of mitigation and order of priority applied to the PMT and details on considerations made in moving from one level to the next;

ii) measures to avoid, minimize and restore impacts on the elements identified in b), including a discussion on the following:

a. trenchless pipe installation, including the criteria for determining when it will be used;

b. line of sight reduction;

c. linear feature disturbance reduction, including interactions with existing disturbances;

d. access management;

e. methods of reclamation and re-vegetation, including a discussion of woody material handling, site and soil treatment and active re-vegetation, where ground cover and full canopy trees have been impacted; and

f. measures to further reduce or eliminate potential effects on the use of traditional and land and resources by Aboriginal groups in the PMT; and

d) a description of the construction and operational monitoring plans that will be used to assess and demonstrate implementation and report effectiveness of mitigation, including;

i) a description of the criteria to assess effectiveness; and

ii) a plan for the participation of Aboriginal groups, including but not limited to the implementation of NGTL's Aboriginal Construction Training Program within the PMT; and

e) a description and justification for how NGTL has incorporated the results of consultation with Aboriginal groups and government authorities into the plan, including:

i) how available and applicable TLU studies were taken into consideration in developing mitigation within the PMT;

ii) how new or additional information provided through consultation was considered and addressed;

iii) how the final mitigation measures accounted for and addressed any concerns or requests from Aboriginal groups and government authorities; and

iv) a description and justification for why any concerns or requested measures were not incorporated into the plan;

f) methods for determining the extent of non-avoidable effects on b) within the PMT;

g) a discussion on possible enhancement or offset measures for all non-avoidable effects on socio-economic elements within the PMT including how any measures would be determined to be effective or adequate; and

h) a summary of any outstanding issues or concerns raised by potentially affected Aboriginal groups or government authorities, including a description of how these concerns or issues have been or will be addressed by NGTL.

12. Peace Moberly Tract Protection Plan (PMTPP) – Consultation Plan

NGTL shall file with the Board for approval, at least *120 days* prior to commencing construction in the PMT, a plan for consultation with West Moberly First Nations, Saulteau First Nations, and relevant provincial or federal departments or authorities for the development of the PMTPP. The consultation plan must include, but not be limited to:

a) the goals, principles and objectives for consultation for the development of the PMTPP;

b) a list of Aboriginal groups and government departments that have been identified for consultation;

c) a schedule and description of consultation activities, including defined outcomes or objectives for the activities;

d) a description of how information provided by Aboriginal groups and provincial or federal departments or authorities will be incorporated into the PMTPP, including:

i) how available and applicable traditional land and resource use studies will be considered and incorporated in the PMTPP;

ii) how new or additional information will be considered and addressed;

iii) a description of the process and criteria that will be used to evaluate proposed or requested mitigation measures for the PMTPP, including the process and criteria for any concerns or proposed measures that will not be incorporated into the PMTPP;

e) a description of the process to be used for review of the final plan by participating Aboriginal groups and government departments, including review of all final proposed mitigation measures; and

f) a description of the resources that will be available to support the participation of Aboriginal groups in the development of the PMTPP.

13. Visual Impacts Mitigation Plan for Groundbirch Compressor Station

NGTL shall file with the Board, for approval, at least *30 days* prior to commencement of construction of the access road for the Groundbirch Compressor Station, a plan to mitigate the visual impacts of the compressor station access road on affected landowners. This plan must include, but is not limited to:

a) a detailed description of the measures NGTL will implement to fulfill its commitment to reducing visual impacts, including but not limited to retaining the tree line along the access road for the Groundbirch Compressor Station;

b) a summary of consultations with the affected landowners regarding the measures to reduce visual impacts, including retaining and maintenance of the tree line. This must include a summary of any concerns raised by the affected landowners, how NGTL has addressed these concerns, and how any outstanding concerns raised by the affected landowners will be addressed or explanation why no further steps would be taken; and

c) confirmation of:

i) the land tenure or ownership of the lands for the access road, including the land on which the tree line is located; and

ii) the length of time over which NGTL will implement mitigation measures, including retaining the tree line along the access road for the Groundbirch Compressor Station.

14. Environmental Protection Plan (EPP)

NGTL shall file with the Board for approval, **at least 60 days prior to commencing construction**, an updated EPP specific to the Section 52 Facilities that includes, but is not limited to, the following:

a) environmental procedures including site-specific plans, criteria for implementation of these procedures, mitigation measures and monitoring applicable to all Project phases and activities;

b) a reclamation plan, which includes a description of the condition to which NGTL intends to reclaim and maintain the RoW, once construction has been completed, and a description of measurable goals for reclamation;

c) all mitigation related to caribou and caribou habitat which includes:

i) NGTL's commitments to adhering to specific provincial and federal best practices, requirements and timing restrictions;

ii) a list of all measures to minimize disturbance to caribou habitat, and measures to be taken before and during construction to help accelerate the restoration of caribou habitat; and

iii) the locations where those measures will be taken.

d) all mitigation related to western toad and western toad habitat which includes:

i) a description of how NGTL will raise awareness of construction personnel of the potential presence of western toad on the RoW and ensure the implementation and compliance with its Wildlife Species of Concern Discovery Contingency Plan;

ii) a description of the frequency and location of sweeps that will be conducted to determine the presence of western toad on the RoW; and

iii) a description of the specific deterrent and relocation measures that will be implemented if western toad is discovered on the RoW during construction.

e) environmental alignment sheets, for the construction and operation of the Section 52 Facilities; and

f) evidence demonstrating that:

i) there is a management system in place, which ensures the updates of the environmental protection procedures, mitigation measures and monitoring are effectively communicated to employees, contractors and regulators; and

ii) consultation took place with relevant government authorities, where applicable.

The EPP shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in NGTL's application for the Section 52 Facilities, subsequent filings, evidence collected during the hearing process, or as otherwise agreed to during questioning and in its related submissions. The EPP shall describe the criteria for the implementation of all procedures and measures.

15. Caribou Habitat Restoration Plan (CHRP)

NGTL shall file with the Board for approval, in accordance with the timelines below, preliminary and final versions of a CHRP for each of the Aitken Creek and Kahta Sections of the Section 52 Facilities. At the time of filing with the Board, NGTL shall provide a copy of the filings to Environment Canada and the appropriate provincial authorities.

a) Preliminary CHRP to be filed **at least 90 days prior to commencing construction**. This version of the CHRP shall include, but not be limited to:

i) the goals and measureable objectives of the CHRP;

ii) decision frameworks that will be used to prioritize potential caribou habitat restoration sites and to prioritize mitigative actions to be used at different types of sites, including consideration of typical site factors that may constrain implementation;

iii) a literature review on which the decision frameworks are based including:

a. an identification of temporal and special caribou habitat restoration methodologies applicable to mountain caribou;

b. an assessment of the relative effectiveness of the identified methodologies;

c. detailed methodology of how the literature review was conducted.

iv) the quantifiable targets and performance measures that will be used to evaluate the extent of predicted residual effects, the extent to which the goals and objectives have been met, and the need for consequent compensation offsets;

v) a schedule indicating when measures will be initiated and completed;

vi) a table summarizing any differences or updates from the last previous NGTL CHRP filed with the Board for other projects; and

vii) evidence and a summary of how consultation feedback from Environment Canada and appropriate provincial authorities is integrated into the CHRP.

b) Final CHRP to be filed **on or before 1 November after the first complete growing season following the commencement of operation for the Section 52 Facilities**. This updated version of the CHRP shall include, but not be limited to:

i) the preliminary CHRP, with any updates identified in a revision log that includes the rationale for any changes to decision making criteria;

ii) a complete table describing caribou habitat restoration sites, including but not limited to location, spatial area, description of habitat quality, site-specific restoration activities and challenges;

iii) specification drawings for the implementation of each restoration method;

iv) maps or Environmental Alignment Sheets showing the locations of the sites;

v) evidence of how further consultation feedback from Environment Canada and appropriate provincial authorities is integrated into the plan; and

vi) a quantitative and qualitative assessment of the total area of direct disturbance to caribou habitat that will be restored, the duration of spatial disturbance, and the aerial extent of the resulting residual effects to be offset, which also includes indirect disturbance.

16. Access Management Plan (AMP)

NGTL shall file with the Board for approval, **at least 90 days prior to commencing construction**, an Access Management Plan (AMP) for non-parallel disturbances along the RoW for each of the Aitken Creek and Kahta Sections of the Section 52 Facilities, which includes, but is not limited to:

a) the methodology used to develop the AMP, including baseline information to be used for assessing effectiveness;

b) the goals for monitoring and managing access, and the measures and criteria to be used to achieve those goals;

c) the method and frequency of inspections for access controls along the ROW during operations for the life of the Project;

d) the criteria for determining the need for maintenance, repair, or installation of new access control measures, including:

i) a description of the contingency measures that will be implemented if existing access controls prove to be ineffective at preventing new access;

ii) an indication of the timeframe to implement contingency measures; and

e) a schedule for reporting to the Board during construction and operation, including after the first, third and fifth year following the commencement of construction:

   i) the relative amount of access (increase or decrease and by quantifiable amount over baseline or previous reporting period);

   ii) steps taken when implementing the criteria identified in (d); and

   iii) the results of the evaluation of the overall effectiveness of the AMP.

17. Grizzly Bear Report

For each of the Aitken Creek and Kahta Sections of the Section 52 Facilities, if the commencement of construction will occur between 15 November and 1 May, NGTL shall file with the Board a Grizzly Bear Report, **at least 14 days prior to commencing construction**. The Grizzly Bear Report shall provide a summary of the results of the grizzly bear den sweeps to identify potential grizzly bear dens within 750 m of the Section 52 Facilities. The Grizzly Bear Report shall also include:

a) if a grizzly bear den is found during a sweep, any newly-developed or modified mitigation measures as well as evidence of consultation with the appropriate federal and provincial authorities regarding the proposed mitigation;

b) confirmation that no changes to the EPP are required as a result of the findings of a sweep or mitigation measures identified in (a), or if changes are necessary, provide the EPP pages that have been amended.

For each of the Aitken Creek and Kahta Sections of the Project, if no construction will occur on or after 15 November, NGTL shall file with the Board, **at least 14 days prior to commencing construction,** a letter indicating that the grizzly bear den survey will not be required.

18. Navigation and Navigation Safety Plan

For each of the Aitken Creek and Kahta Sections of the Section 52 Facilities, NGTL shall file with the Board for approval, **at least 60 days prior to commencing construction**, a Navigation and Navigation Safety Plan specific to the Section 52 Facilities that includes, but is not limited to:

a) an updated listing of navigable waters to be crossed by the Section 52 Facilities or affected by the Section 52 Facilities;

b) an updated listing of effects of the Section 52 Facilities on navigation and navigation safety;

c) evidence and a summary of NGTL's consultation with potentially affected waterway users and Aboriginal groups regarding navigation use, including any concerns that were raised and how those have been addressed; and

d) proposed mitigation measures to address effects of the Section 52 Facilities on navigation and navigation safety for each navigable waterway.

19. Programs and Manuals

NGTL shall file with the Board the following programs and manuals within the time specified:

a) Updated Construction Safety Manual, pursuant to section 20 of the *National Energy Board Onshore Pipeline Regulations*: **at least 14 days prior to commencing construction**;

b) Field Joining Program: at least **14 days prior to the commencement of joining activity**;

c) Field Pressure Testing Program: at least **14 days prior to the commencement of pressure testing**:

d) Operation and Maintenance Manual: at least **14 days prior to the commencement of operation:** and

e) Three copies of an updated Emergency Procedures Manual(s) or confirmation that the existing Emergency Procedures Manual(s) are inclusive of the Section 52 Facilities and do not require updating: **at least 45 days prior to the commencement of operation**.

20. Final Pipe Specifications

NGTL shall file with the Board, **at least 14 days prior to commencing construction**, NGTL's final Pipeline Construction Specifications.

21. Commitments Tracking Table (CTT)

NGTL shall:

a) file with the Board and post on its Project website, **within 90 days after the Certificate date and at least 30 days prior to commencing construction**, a Commitments Tracking Table listing all commitments made by NGTL in its Application, and as otherwise agreed to during questioning or in its related submissions, including reference to:

   i) the documentation in which the commitment appears (for example, the Application, responses to information requests, hearing transcripts, permit requirements, condition filings, or other);

   ii) the accountable lead for implementing each commitment; and

   iii) the estimated timelines associated with the fulfillment of each commitment.

b) update the status of the commitments in a) on its Project website on a:

   i) monthly basis until the commencement of operation; and

   ii) quarterly basis until the end of the fifth (5th) year following the commencement of operation; and

c) maintain at its construction office(s):

   i) the Commitments Tracking Table listing all regulatory commitments and their completion status, including but not limited to those commitments resulting from NGTL's Application and subsequent filings and conditions from permits, authorizations and approvals;

   ii) copies of any permits, approvals or authorizations issued by federal, provincial or other permitting authorities, which include environmental conditions or site-specific mitigation or monitoring measures; and

   iii) any subsequent variances to any permits, approvals or authorizations in ii).

22. Construction Schedule

NGTL shall file with the Board, **at least 14 days prior to commencing construction of the approved facilities**, a detailed construction schedule(s) identifying major construction activities, and shall notify the Board of any modifications to the schedule(s) as they occur.

During Construction

23. Finalized Watercourse Crossing Designs

For all watercourse crossings, NGTL shall file with the Board, **at least 60 days prior to commencing any watercourse crossing construction activities**:

a) an updated inventory of all the watercourses to be crossed. This inventory shall include:
   i) location(s) of the crossing(s);
   ii) primary and contingency crossing methods;
   iii) timing of construction;
   iv) presence of fish and fish habitat;
   v) fisheries timing window of least risk for each crossing; and
   vi) whether all of Fisheries and Oceans Canada's applicable "Measures to Avoid Causing Harm to Fish and Fish Habitat" will be implemented.

b) detailed generic design drawings of trenchless, dry open-cut, frozen open-cut and isolation crossings of various watercourse types;

c) for each non-trenchless watercourse crossing that will be conducted outside of the fisheries window of least risk (both primary and contingency methods), or any crossings that will be conducted in non-isolated flowing water conditions, include:
   i) detailed crossing specific design drawings;
   ii) the fish species that may be present and if fish spawning is likely to occur within the immediate area;
   iii) mitigation to be used to minimize impacts to fish; and
   iv) a discussion of potential impacts to local fisheries resources within the immediate area as a result of the crossing construction.

24. Authorizations under paragraph 35(2)(b) of the Fisheries Act

a) For those watercourse crossings that will require an authorization under paragraph 35(2)(b) of the *Fisheries Act*, NGTL shall file with the Board for approval, **at least 120 days prior to commencing construction of those watercourse crossings:**
   i) a draft *Application Form for Paragraph 35(2)(b) Fisheries Act Authorization* for those watercourses crossings that will require authorization under paragraph 35(2)(b) of the *Fisheries Act;*
   ii) a draft application package for authorization that includes all the information detailed in the *Applicant's Guide to Submitting an Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act,* including:
      a. contact information;
      b. a description of the proposed work, undertaking or activity;
      c. detailed design;
      d. the timeline;

e. location;

f. a description of fish and fish habitat (aquatic environment);

g. a description of effects on fish and fish habitat;

h. measures and standards to avoid or mitigate serious harm to fish;

i. a description of the monitoring measures;

j. residual serious harm to fish after implementing avoidance and mitigation measures and standards;

k. an offsetting plan, including associated monitoring programs;

l. proof of the letter of credit; and

iii) a summary of NGTL's consultation with government authorities, stakeholders, and any potentially affected Aboriginal groups, regarding the works proposed to be authorized, as well as any offsetting measures proposed. This summary must include any issues or concerns raised regarding these works and how NGTL has addressed or responded to them; and

b) NGTL shall file with the Board, **at least 10 days prior to commencing construction of those watercourse crossings identified in a)**, a copy of the *Fisheries Act* paragraph 35(2)(b) Authorization issued by Fisheries and Oceans Canada.

25. Trenchless Crossings

Should NGTL decide to use alternative crossing techniques from its proposed trenchless watercourse crossing method:

a) for those watercourse crossings that will not require a *Fisheries Act* paragraph 35(2)(b) Authorization, NGTL shall file at least 30 days prior to the undertaking of the contingency crossing method:

i) a summary of changes and the reasons for that change;

ii) copies of all correspondence from regulatory authorities relating to the change; and

iii) an assessment of effects to fish and fish habitat; and/or

b) for those watercourse crossings that may require a *Fisheries Act* paragraph 35(2)(b) Authorization, NGTL shall file at least 60 days prior to the undertaking of the contingency crossing method:

i) a summary of changes and the reasons for that change;

ii) copies of all correspondence from regulatory authorities relating to the change;

iii) an assessment of effects to fish and fish habitat; and

iv) a draft *Fisheries Act* Application package.

26. Hydrostatic Testing Plan

NGTL shall file with the Board, **at least 60 days prior to pressure testing**, a Hydrostatic Testing Plan for the Section 52 Facilities that includes:

a) the location(s) of water withdrawal and discharge;

b) clearing activities or any other associated works, if required, to allow for transport of the hydrostatic test water to the Section 52 Facilities;

c) the rate(s) of water withdrawal;

d) the volume(s) of water withdrawal;

e) the flow rate/volume of water at withdrawal location(s); and

f) any site-specific mitigation measures to be used at the water withdrawal and discharge locations, or at any other locations required to allow for the transport of hydrostatic test water.

27. Construction Progress Reports

NGTL shall file with the Board, **at the middle and end of each month during construction**, construction progress reports. The reports shall include information on the activities carried out during the reporting period; any environmental, socio-economic, safety and security issues and issues of non-compliance; and the measures undertaken for the resolution of each issue and non-compliance.

Each construction progress report, filed after 15 December 2015 for the Aitken Creek Section and after 15 December 2016 for the Kahta Section, shall also include:

a) an update on the extent to which potential delays to the construction schedule filed with the Board risk the overlap of construction activities with caribou critical timing windows; and

b) an explanation of whether any additional mitigation measures are required and will be implemented to reduce that risk.

28. Welding and Non-Destructive Examination Procedures

NGTL shall, during construction, maintain at each construction site:

a) a copy of the applicable welding procedures;

b) a copy of the applicable non-destructive examination and testing procedures used on the Project; and

c) all supporting documentation related to non-destructive examination and testing.

29. Horizontal Directional Drilling

NGTL shall file with the Board, at least **30 days before commencement of horizontal directional drilling**, NGTL's horizontal directional drilling execution program.

30. Cathodic Protection

NGTL shall file with the Board, at least **14 days prior to installing cathodic protection in wetland areas**, a detailed description of the specific measures NGTL will implement to ensure cathodic protection is adequately maintained under the concrete coating or weights in wetland areas.

31. Slope and Bank Failures

NGTL shall file with the Board, at least **14 days prior to commencing geo-technical work**, a detailed description and the scope of the mitigation necessary to protect the Section 52 Facilities, the RoW, and to prevent future bank or slope failures.

Post-Construction and Operations

32. Quantification and Mitigation of Construction-Related Greenhouse Gas (GHG) Emissions

NGTL shall file with the Board, **at least 30 days prior to requesting Leave to Open**, a quantitative assessment of GHG emissions directly related to the construction and clearing of each of the Aitken Creek and Kahta Sections of the Section 52 Facilities (presented separately), including but not limited to emissions generated by vehicles and equipment, land clearing and slash burning. In addition to the results of the assessment, the filing shall describe the calculation methodology used, identify assumptions and inputs, and describe what variables may affect the results. The filing shall also describe measures implemented to reduce GHG emissions and any measures implemented or planned to offset the GHG emissions.

33. Quantification of Operation-Related GHG Emissions

NGTL shall file with the Board, **at least 60 days prior to requesting Leave to Open**, an updated quantitative assessment of GHG emissions directly related to the operation of each of the Aitken Creek and Kahta Sections of the Section 52 Facilities (presented separately), including but not limited to emissions generated by fossil fuel combustion, fugitive emissions and maintenance activities. In addition to the results of the assessment, the filing shall describe the calculation methodology used, identify assumptions and inputs, and describe what variables may affect the results. The filing must also describe mitigation measures implemented or planned to reduce the GHG emissions and any measures implemented or planned to offset the GHG emissions.

34. Noise Assessment

NGTL shall, **within 120 days of the commencement of operation of the Groundbirch Compressor Station**:

a) conduct post-construction noise monitoring at the Groundbirch Compressor Station;

b) file the results of post-construction noise monitoring with the Board demonstrating compliance with the British Columbia Oil and Gas Commission's *British Columbia Noise Control Best Practices Guideline*; and

c) if there is an increase in overall sound levels and/or low frequency noise, file a plan for how NGTL will achieve compliance with the *British Columbia Noise Control Best Practices Guideline*.

35. Peace Moberly Tract - Monitoring Report

On or before 31 January after each of the first, third and fifth complete growing seasons following the commencement of operation of the pipeline, NGTL shall file with the Board, a PMT monitoring report that:

a) describes the methodology used for monitoring, the criteria established for evaluating success and the results found, for Board approval;

b) identifies the environmental and socio-economic issues to be monitored, including but not limited to unexpected issues that arose during construction, and their locations;

c) describes the current status of the issues (resolved or unresolved), any deviations from plans and corrective actions that were or will be undertaken;

d) assesses the effectiveness of mitigation (planned and corrective) measures applied against the criteria for success;

e) describes consultation undertaken with Aboriginal groups and appropriate provincial and federal authorities, including a summary of any concerns raised, any steps taken to address the concerns or an explanation why no further steps were required, and any outstanding concerns;

f) a summary of activities undertaken to implement plans for monitoring by or with representatives from Aboriginal communities, including:

   i) issues identified by representatives or monitors from Aboriginal communities;

   ii) the status of the issues;

   iii) a description of any recommendations made by representatives or monitors from Aboriginal communities, whether these were implemented, and explanation why any recommendations from Aboriginal communities were not implemented; and

   iv) a description of any resources provided to Aboriginal communities that supported their participation in activities, including monitoring; and,

g) provides proposed measures and the schedule that NGTL would implement to address ongoing issues or concerns, for Board approval.

36. Offsets Measures Plan for Residual Impacts to Caribou Habitat

NGTL shall file with the Board for approval, a plan to offset all residual effects of the Aitken Creek Section 52 Facilities resulting from directly and indirectly disturbed critical habitat for caribou, after taking into account the implementation of the EPP and CHRP measures (Offset Measures Plan). NGTL shall provide a copy of the Offset Measures Plan to Environment Canada and the appropriate provincial authorities. The Offset Measures Plan for the Section 52 Facilities shall include:

a) a preliminary version, to be filed with the Board for approval **at least 90 days prior to requesting Leave to Open for the Aitken Creek section the Section 52 Facilities,** including, but not limited to, a discussion of:

   i) an initial quantification of the area of critical habitat for caribou directly and indirectly disturbed;

   ii) a list of the potential on-the-ground offset measures available, the expected effectiveness of each, including a discussion of uncertainty, and how the measures align with criteria specified in the scientific literature specific to conservation offsets;

   iii) the relative quantitative and qualitative value of each measure towards achieving the offset;

   iv) the proposed offset ratios for each potential measure, based on consultation with expert agencies and on a review of the literature on conservation offsets; and

   v) decision framework that will be used to select which specific offset measures and accompanying offset ratios would be used under what circumstances; and

b) a final version, to be filed with the Board for approval **on or before 1 February after the second complete growing season following the commencement of operation for the Aitken Creek section of the Section 52 Facilities**, including:

i) the contents of the preliminary version, with any updates identified in a revision log that includes the rationale for any changes to decision making criteria;

ii) a complete table listing the offset measures and offset ratios to be implemented or already underway, including site-specific details and map locations, and an explanation of how they meet criteria in the scientific literature for offsets;

iii) a description of factors considered when determining the location for offset measures, including consideration of how the measures could maximize benefits to landscape variables;

iv) a schedule indicating when offset measures will be initiated and the estimated date when implementation will be complete; and

v) an assessment of the predicted effectiveness of the measures, including a discussion of uncertainty, and a quantitative compilation showing how the offset measures have offset the previously calculated residual effects;

c) Both the preliminary and final versions of the plan shall also include:

i) evidence of how consultation feedback from Environment Canada, provincial authorities and any potentially affected Aboriginal groups is integrated into the plan; and

ii) any updates to applicable Recovery Strategy, Range and Action Plans, as well as range boundaries and identified critical habitat made prior and up to the date on which LTO is granted.

37. Caribou Habitat Restoration and Offset Measures Monitoring Program

NGTL shall file with the Board for approval, **on or before 1 February after the first complete growing season following the commencement of operation for each of the Aitken Creek and Kahta Sections of the Section 52 Facilities,** a Program for monitoring and verifying the effectiveness of the caribou habitat restoration and offset measures implemented as part of the CHRP and Offset Measures Plan. This Caribou Habitat Restoration and Offset Measures Monitoring Program shall be for a minimum of 10 years and include, but not be limited to:

a) the scientific methodology or protocol for short-term and long-term monitoring of the restoration and offset measures, and the effectiveness of the measures;

b) frequency, timing, locations and the rationale for each monitoring;

c) protocols for how restoration and offset measures will be adapted, as required, based on the monitoring results from the implementation of either section of the Section 52 Facilities or other NGTL CHRPs and Offset Measures Plans; and

d) a schedule for filing reports of monitoring results and the adaptive management responses, to the Board, Environment Canada and provincial authorities to be contained in the Caribou Habitat Restoration and Offset Measures Monitoring Program as well as at the beginning of each report filed.

38. Caribou Monitoring Reports

NGTL shall file with the Board, based on the schedule referred to in the Caribou Habitat Restoration and Offset Measures Monitoring Program, a report(s) outlining the results of the monitoring program.

39. Post-Construction Monitoring Reports

On or before 31 January after each of the first, third and fifth complete growing seasons following the commencement of operation of the Section 52 Facilities, NGTL shall file with the Board, a post-construction environmental monitoring report that:

a) describes the methodology used for monitoring, the criteria established for evaluating success and the results found;

b) identifies any modifications for the criteria established for evaluating reclamation success described in its EPP, as approved by the Board, and the rationale for any modifications;

c) identifies the issues to be monitored, including but not limited to unexpected issues that arose during construction, and their locations (e.g. on a map or diagram, in a table);

d) describes the current status of the issues (resolved or unresolved), any deviations from plans and corrective actions undertaken;

e) assesses the effectiveness of the mitigation (planned and corrective) measures applied against the criteria for success;

f) includes details of consultation undertaken with the appropriate provincial and federal authorities; and

g) provides proposed measures and the schedule that NGTL would implement to address ongoing issues or concerns.

The report shall address, but not be limited to, the issues pertaining to soils, weeds, watercourse crossings, wetlands, rare plants, wildlife and wildlife habitat, fish and fish habitat, species at risk, and any activities associated with the hydrostatic testing plans.

40. Geotechnical Report Regarding Slope Stability

NGTL shall file with the Board, **within 90 days of the completion of construction,** a geotechnical report which includes:

a) the geotechnical observations;

b) the field recommendations;

c) how NGTL implemented the field recommendations during construction of the Section 52 Facilities;

d) the location of trench breakers, drainage and erosion control measures;

e) all of the slope stabilization techniques implemented;

f) its recommendations with respect to follow up monitoring, notably at locations where inactive slide areas have been noted;

g) a plan to follow up on the recommendations made in f); and

h) a rationale for circumstances where field or other recommendations have not been implemented.

41. Geotechnical Report Regarding Muskeg

NGTL shall file with the Board, **within 90 days of the completion of construction**, a geotechnical report which includes, but is not limited to:

a) the muskeg observations;

b) the field recommendations;

c) how NGTL implemented the field recommendations during construction of the Section 52 Facilities;

d) its recommendations with respect to follow up monitoring;

e) a plan to follow up on the recommendations made; and

f) a rationale for any instance where recommendations have not been implemented.

42. Geotechnical Report Regarding Permafrost

NGTL shall file with the Board, **within 90 days of the completion of construction,** a geotechnical report which includes, but is not limited to:

a) the permafrost observations;

b) the field recommendations;

c) how NGTL implemented the field recommendations during construction of the Section 52 Facilities;

d) its recommendations with respect to follow up monitoring;

e) a plan to follow up on the recommendations made; and

f) a rationale for any circumstances when recommendations are not followed.

43. Pipeline Geographic Information System (GIS) Data

NGTL shall file with the Board, **within one year after commencing operations**, GIS data in the form of an Esri®shape file that contains pipeline segment centre lines, where each segment has a unique outside diameter, wall thickness, MOP, external coating, field-applied girth weld coating, and pipe manufacturing specification. If the above values of the pipeline change at any point along the length of the pipeline, the pipeline should be segmented at that point. NGTL shall also provide GIS locations and names of pump stations, terminals, custody transfer meters, and block valves, as applicable.

The datum must be NAD83 and projection must be geographic (latitudes and longitudes).

44. Condition Compliance by a Company Officer

Within **30 days of the date that the approved Section 52 Facilities are placed in service**, NGTL shall file with the Board a confirmation, by an officer of the Company, that the approved Section 52 Facilities were completed and constructed in compliance with all applicable conditions in this Certificate.

If compliance with any of the applicable conditions cannot be confirmed, the officer of the Company shall file with the Board details as to why compliance cannot be confirmed. Any filing required by this condition shall include a statement confirming that the signatory to the filing is an officer of the Company.

45. Sunset Clause

Unless the Board otherwise directs prior to [one year from the date the Certificate is granted], this Certificate shall expire on [same date chosen above], unless construction in respect of the Section 52 Facility has commenced by that date.

Appendix III

Section 58 Order

ORDER XG-N081-010-2015

IN THE MATTER OF the *National Energy Board Act* (NEB Act) and the regulations made thereunder; and

IN THE MATTER OF an application dated 8 November 2013 by NOVA Gas Transmission Ltd. (NGTL) pursuant to subsection 58(1) of the NEB Act, for the construction and operation of temporary infrastructure including stockpile sites, laydown areas, borrow pits/dugouts, contractor yards and construction camps (Section 58 Facilities), under file OF-Fac-Gas-N081-2013-10 02.

BEFORE the Board on 10 March 2015.

WHEREAS NGTL filed an application dated 8 November 2013 for a Certificate of Public Convenience and Necessity (Certificate) to construct and operate the North Montney Mainline - an extension of the NGTL System to the North Montney area in northeastern British Columbia - and other approvals under the NEB Act (the Project);

AND WHEREAS the application included a request for an order pursuant to subsection 58(1) of the NEB Act exempting certain facilities from subsections 31(c), 31(d) and sections 33 of the NEB Act in respect of its proposed Section 58 Facilities;

AND WHEREAS the Board held a public hearing in respect of the Project pursuant to Hearing Order GH-001-2014 in Calgary, Alberta on 14 to 17, 20 to 24 and 27 October 2014; and in Fort St. John, British Colombia from 18 to 22, 24 and 25 November 2014;

AND WHEREAS the Board had regard to all considerations that are directly related to the Project and were relevant, including environmental matters pursuant to Part III of the NEB Act, and conducted an environmental assessment of the Project;

AND WHEREAS the Board's recommendations and decisions on the application, and reasons, are set out in the GH-001-2014 National Energy Board Report;

AND WHEREAS the majority of the Board concluded that with the implementation of NGTL's environmental protection procedures and mitigation measures and the Board's recommendations, the Project would not be likely to cause significant adverse environmental effects;

AND WHEREAS the Board will submit its Report to the Minister recommending that a Certificate be issued for the Project pursuant to subsection 52(1) of the NEB Act, and the Governor in Council's order pursuant to either section 53 or 54 of the NEB Act is therefore pending;

IT IS ORDERED that pursuant to subsection 19(1) of the NEB Act, this Order takes effect only upon the issuance of a Certificate in respect of the Section 52 Facilities;

IT IS FURTHER ORDERED that pursuant to subsection 58(1) of the NEB Act, the Section 58 Facilities for the Project are approved, and NGTL is exempted from the requirements of subsections 31(c) and 31(d), and section 33 of the NEB Act for the Section 58 Facilities, subject to the following conditions:

General

1. ***Condition Compliance***

NGTL shall comply with all of the conditions contained in this Order, unless the Board otherwise directs.

2. ***Engineering***

NGTL shall cause the approved Section 58 Facilities to be constructed and operated in accordance with the specifications, standards and other information referred to in its Application or as otherwise agreed to during questioning and in its related submissions.

3. ***Implementation of Environmental Protection***

NGTL shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations and procedures for the protection of the environment included in or referred to in its Application or as otherwise agreed to during questioning and in its related submissions.

Prior to Construction (Including Clearing or Ground-breaking Activities)

4. ***Project Confirmation and Contractual Commitments***

NGTL shall file with the Board, **at least 30 days prior to commencing construction**, a confirmation, by an officer of the Company, that:

a) Progress Energy Canada Ltd. has made a positive final investment decision on the proposed Pacific Northwest LNG Project;

b) TransCanada is proceeding with construction of the Prince Rupert Gas Transmission pipeline; and

c) The Progress Delivery Project Expenditure Authorization and associated Service Documents for FT-D delivery service at the Mackie Creek Interconnection continue to be in effect for the quantity of 2,340 terajoules per day as detailed in Section 3 of NGTL's Application.

5. ***Commitments Tracking Table***

NGTL shall:

a) file with the Board and post on its Project website, **at least 30 days prior to the commencement of construction**, a Commitments Tracking Table listing all commitments made by NGTL in its Application, and otherwise agreed to during questioning or in its related submissions, including reference to:

i) the documentation in which the commitment appears (for example, the Application, responses to information requests, hearing transcripts, permit requirements, condition filings, or other);

ii) the accountable lead for implementing each commitment; and

iii) the estimated timelines associated with the fulfillment of each commitment.

b) update the status of the commitments in a) on its Project website on a:

i) monthly basis until the commencement of operation; and

ii) quarterly basis until the end of the fifth (5th) year following the commencement of operation.; and

c) maintain at its construction office(s):

i) the Commitments Tracking Table listing all regulatory commitments and their completion status, including but not limited to those commitments resulting from NGTL's Application and subsequent filings and conditions from permits, authorizations and approvals;

ii) copies of any permits, approvals or authorization for the Section 58 Facilities issued by federal, provincial or other permitting authorities, which include environmental conditions or site-specific mitigation or monitoring measures; and

iii) any subsequent variances to any permits, approvals or authorizations in c) ii).

6. Heritage Resources

NGTL shall file with the Board, **at least 30 days prior to commencing construction of the Section 58 Facilities for each of the Aitken and Kahta Sections:**

a) copies of all archaeological and heritage resource permits and clearances obtained from BC Archaeology Branch; and

b) a statement of how NGTL intends to implement any recommendations contained in a).

7. Employment, Contracting and Procurement Monitoring Reports

NGTL shall file with the Board, and send a copy to Intervenors, **at least 30 days prior to commencing construction, and every 180 days thereafter until completion of construction monitoring reports**, on employment, contracting and procurement of Aboriginal groups, businesses and individuals for the construction of the Section 58 Facilities. The reports must include:

a) a summary of the total employment, contracting and procurement of Aboriginal groups, businesses and individuals for construction of the Section 58 Facilities during the reporting period, including:

i) the number of Aboriginal individuals employed, and a summary description of the types of positions filled by Aboriginal employees during the reporting period;

ii) a summary description of the contracts awarded to or executed with Aboriginal groups, businesses or individuals during the reporting period, and the total monetary values of these;

iii) a summary description of procurement awarded to Aboriginal groups, businesses, or individuals during the reporting period, and the total monetary value of these; and,

iv) a comparison of the totals and values described in a) i) through iii) in relation to NGTL's stated commitments for employment, contracting and procurement of Aboriginal groups, businesses and individuals for the construction of the Section 58 Facilities; and,

b) a summary of NGTL's consultation with Aboriginal groups for the Project, businesses or representatives regarding employment, contracting and procurement for the reporting period, including any issues or concerns raised and how NGTL has addressed or responded to them.

NGTL shall file with the Board, **within three months of completion of construction**, and provide a copy to all affected Aboriginal groups, a final report on employment, contracting and procurement of Aboriginal groups, businesses and individuals during the construction phase.

On or before 31 January after each of the first, third, fifth years following the commencement of operation of the section 58, NGTL shall file with the Board, and provide a copy to all affected Aboriginal groups, reports on employment, contracting and procurement regarding the Section 58 Facilities of Aboriginal groups, businesses and individuals for the Project, during each reporting period.

8. Construction Training and Education Monitoring Reports

NGTL shall file with the Board, and send a copy to Intervenors, **at least 30 days prior to commencing construction, and every 180 days thereafter until completion of construction**, monitoring reports for the implementation and outcomes of training and education initiatives and opportunities provided to Aboriginal groups and individuals for the Project.

The reports must include:

a) a description of each training and education initiative and opportunity implemented during the reporting period, including duration, participant groups, delivery agency or institution, and intended outcomes;

b) a description of any measures identified to address or meet the terms or commitments; and

c) a summary of NGTL's consultation with relevant Aboriginal groups or representatives, government sponsors, industry associations, and delivery agencies or institutions regarding training and education initiatives and opportunities for the reporting period, including any issues or concerns raised and how NGTL has addressed or responded to them.

NGTL shall file with the Board, and provide a copy to all affected Aboriginal groups, **within three months of completion of construction**, a final report on training and education initiatives and opportunities for Aboriginal groups and individuals during the construction phase.

On or before 31 January after each of the first, third, fifth years following the commencement of operation of the Section 58 Facilities, NGTL shall file with the Board, and provide a copy to all affected Aboriginal groups, reports on training and education initiatives and opportunities provided to Aboriginal groups and individuals for the Project, during each reporting period.

9. Environmental Protection Plan (EPP)

NGTL shall file with the Board for approval, **at least 45 days prior to commencing construction,** an updated EPP (including Environmental Alignment Sheets) specific to the Section 58 Facilities. The EPP

shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in NGTL's Application, subsequent filings, evidence collected during the hearing process, or as otherwise agreed to during questioning and in its related submissions. The EPP shall describe the criteria for the implementation of all procedures and measures.

10. Grizzly Bear Report

For the Section 58 Facilities, if the Commencement of Construction will occur between 15 November and 1 May, NGTL shall file with the Board a Grizzly Bear Report, **at least 14 days prior to commencing construction**. The Grizzly Bear Report shall provide a summary of the results of the grizzly bear den sweeps to identify potential grizzly bear dens within 750 m of the Section 58 Facilities. The Grizzly Bear Report shall also include:

a) if a grizzly bear den is found during a sweep, any newly-developed or modified mitigation measures as well as evidence of consultation with the appropriate federal and provincial authorities regarding the proposed mitigation;

b) confirmation that no changes to the EPP are required as a result of the findings of a sweep or mitigation measures identified in a), or if changes are necessary, provide the EPP pages that have been amended.

For each section of the Project, if no construction will occur on or after 15 November, NGTL shall file with the Board, **at least 14 days prior to commencing construction,** a letter indicating that the grizzly bear den survey will not be required.

<u>During Construction</u>

11. Construction Progress Reports

NGTL shall file with the Board, **by the middle and end of each month during construction**, construction progress reports. The reports shall include information on the activities carried out during the reporting period; any environmental, socio-economic, safety and security issues and issues of non-compliance; and the measures undertaken for the resolution of each issue and non-compliance.

12. Quantification and Mitigation of Construction-Related Greenhouse Gas (GHG) Emissions

NGTL shall file with the Board, **at least 30 days prior to requesting Leave to Open**, a quantitative assessment of GHG emissions directly related to the construction and clearing of the Section 58 Facilities, including but not limited to emissions generated by vehicles and equipment, land clearing and slash burning. In addition to the results of the assessment, the filing shall describe the calculation methodology used, identify assumptions and inputs, and describe what variables may affect the results. The filing shall also describe measures implemented to reduce GHG emissions and any measures implemented or planned to offset the GHG emissions.

<u>Post-Construction and Operations</u>

13. Condition Compliance by a Company Officer

Within **30 days of the date that the approved Section 58 Facilities are placed in service**, NGTL shall file with the Board a confirmation, by an officer of the Company, that the approved Section 58 Facilities were completed and constructed in compliance with all applicable conditions in this Order.

If compliance with any of the applicable conditions cannot be confirmed, the officer of the Company shall file with the Board details as to why compliance cannot be confirmed. Any filing required by this condition shall include a statement confirming that the signatory to the filing is an officer of the Company.

14. Sunset Clause

Unless the Board otherwise directs prior to 10 June 2016, this Order shall expire on 10 June 2016, unless construction in respect of the Section 58 Facilities has commenced by that date.

The expression "**commencement of construction**" in this Order means the clearing of vegetation, ground-breaking and other forms of right-of way preparation that may have an impact on the environment, but does not include activities associated with normal surveying.

Conditions requiring the filing of material with the National Energy Board "**for approval**" mean that NGTL must not commence construction of the Section 58 Facilities until after the approval is issued.

NATIONAL ENERGY BOARD

Sheri Young
Secretary of the Board

Appendix IV

Part IV Order

ORDER TG-002-2015

IN THE MATTER OF the *National Energy Board Act* (NEB Act) and the Regulations made thereunder;

AND IN THE MATTER OF an application dated 8 November 2013 by NOVA Gas Transmission Ltd. (NGTL), which included a request for an order from the Board pursuant to Part IV of the NEB Act, under file OF-Fac-Gas-N081-2013-10 02 (Application);

AND IN THE MATTER OF Hearing Order GH-001-2014 (Hearing Order);

BEFORE the Board on 10 March 2015.

WHEREAS NGTL filed the Application for a Certificate of Public Convenience and Necessity (Certificate) to construct and operate the North Montney Mainline - an extension of the NGTL System (as defined in the Application) to the North Montney area in northeastern British Columbia - and other approvals under the NEB Act (the Project);

AND WHEREAS the Application included a request for an order from the Board pursuant to Part IV of the NEB Act determining that:

a) prudently incurred costs required to provide service on the applied-for facilities will be included in the determination of the NGTL System revenue requirement; and

b) the tolls for services on the applied-for facilities will be calculated using the same methodology used to calculate tolls for services on all other facilities on the NGTL System, as determined through Board order from time to time;

AND WHEREAS the Board held a public hearing in respect of the Project pursuant to the Hearing Order in Calgary, Alberta on 14 to 17, 20 to 24 and 27 October 2014, and in Fort St. John, British Columbia on 18 to 22, 24 and 25 November 2014;

AND WHEREAS the Board's recommendations and decisions on the Application, and the associated reasons are set out in the GH-001-2014 National Energy Board Report (Report);

AND WHEREAS the Board has found it just and proper to grant such further and other relief, in addition to or in lieu of that requested in the Application:

AND WHEREAS the Board will submit its Report to the Minister recommending that a Certificate be issued for the Project pursuant to subsection 52(1) of the NEB Act (Certificate), and the Governor in Council's order pursuant to either section 53 or 54 of the NEB Act is therefore pending;

IT IS ORDERED that pursuant to subsection 19(1) of the NEB Act, this Order takes effect only upon the issuance of a Certificate in respect of the Section 52 Facilities;

IT IS FURTHER ORDERED that pursuant to subsection 20(1) and Part IV of the NEB Act:

1. North Montney Cost Pool

Before commencing construction, as that term is defined in the Certificate conditions, NGTL shall establish a cost pool for the Project that is separate from the cost pool for the existing NGTL System (North Montney Cost Pool).

a) NGTL shall maintain accounting records capable of providing separate and verifiable information in support of the amounts reported for the North Montney Cost Pool.

b) The North Montney Cost Pool accounting records shall be maintained for the life of the Project, unless otherwise directed by the Board, in a manner consistent with NGTL's system of accounts and corporate accounting policies.

c) NGTL shall record sufficient information in the plant and other balance sheet accounts and income accounts in the North Montney Cost Pool accounting records so that NGTL can provide the Board with the following annual information:

i) revenue requirement summary, including operating expense components and depreciation;

ii) income summary;

iii) rate base summary;

iv) return on rate base, including cost of debt and equity components;

v) abandonment accounts;

vi) summary of revenue by class of service;

vii) inter-cost pool transactions; and

viii) any balances held in deferral accounts.

2. Tolling Methodology for the Transition Period

The Transition Period is the period that starts when gas begins to flow on the Project and expires when North Montney gas production is first delivered at the Mackie Creek Interconnection, which is the point on the Project that NGTL proposes to designate as a Group 1 delivery point and through which gas will flow to the PRGT pipeline.

For each year and part year during the Transition Period:

a) NGTL shall compute its tolls using the sum of the revenue requirement of the Project and the revenue requirement of the existing NGTL System;

b) NGTL shall record the difference between the Project revenue and Project revenue requirement (cost of service) in a deferral account and carry the amount forward to the end of the Transition Period; and

c) **no later than 31 March of the year following the expiration of the Transition Period**, NGTL shall apply to the Board for approval of the disposition of the balance in the deferral account.

3. Filing Requirements

Using the information from the North Montney Cost Pool accounting records, NGTL shall file with the Board:

a) **within 60 days after a Certificate is issued for the Project**: pro forma revenue requirement, pro forma rate base, estimated return on rate base and a summary of estimated shipper revenue by class of service;

b) **within 60 days after a Certificate is issued for the Project**, NGTL's proposed eligibility criteria for including incremental delivery revenue generated from gas deliveries to delivery points on the existing NGTL System during the Transition Period, for Board approval;

c) **within 30 days after the Board grants leave to open for this Project**, up-to-date estimates for revenue requirement, rate base, rate of return and shipper revenue by service class; and

d) **at the same time that NGTL files its Quarterly Surveillance Report**, NGTL shall file similar information for the Project.

4. Default Tolling Methodology Post-Transition Period

Within six months of the expiration of Transition Period, NGTL shall calculate the tolls for services on the Project using a stand-alone tolling methodology, unless NGTL files an application with the Board pursuant to subsection 60(1)(b) of the NEB Act for a tolling methodology other than the default tolling methodology, and the Board subsequently approves that other tolling methodology.

5. Sunset Clause

Unless the Board otherwise directs, the Transition Period expires no later than 48 months after the date on which gas initially flows on the Project.

NATIONAL ENERGY BOARD

Sheri Young
Secretary of the Board